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IN THE UNITED STATES PATENT AND TRADEMARK OFFICE BEFORE THE TRADEMARK TRIAL AND APPEAL BOARD

Optimize Technologies, Inc.,

Opposer,

Wicom GmbH,

Applicant.

Opposition No. 91156666

### OPPOSER'S NOTICE OF RELIANCE PURSUANT TO RULE 2.122(d)(2) and 2.122(e)

Opposer, by its attorney, hereby submits this Notice of Reliance pursuant to Rule 2.122(d)(2). Specifically, Opposer relies on its pleaded Registration Nos. as follows:

- Registration No. 2,048,831, attached as Exhibit A:
- Registration No. 2,100,804, attached as Exhibit B;
- Registration No. 2,023,739, attached as Exhibit C:
- Registration No. 2,023,740, attached as Exhibit D: and
- Registration No. 2,107,751, attached as Exhibit E.



08-23-2004

U.S. Patent & TMOfc/TM Mail Rcpt Dt. #22

Opposer submits herewith certified copies of said registrations, said copies showing both the current status of and current title to the registration.

Opposer, by its attorney, also hereby submits this Notice of Reliance pursuant to Rule 2.122(e). Specifically, Opposer relies on the following printed publication available to the general public in libraries or of general circulation among members of the public or that segment of the public that is relevant under the issues in this proceeding:

OPTIMIZE TECHNOLOGIES Finest Liquid Chromatography & Fluid Handling Components 1997-1998 (attached as Exhibit F).

The printed publication is relevant to show that analytical devices and systems for use in the chemical and physical analysis of solid, liquid and gaseous compounds and mixtures

1	and structural and replacement parts of the type identified by Applicant's application are
2	promoted to identical classes of consumers.
3	Dated this Zota day of August, 2004.
4	
5	CHRISTENSEN O'CONNOR
6	JOHNSON KINDNESSPLLC
7	
8	
9	3 m (· V
	Everett E. Fruehling
10	Steven P. Fricke Attorneys for Opposer Optimize
11	Technologies, Inc.
12	CERTIFICATE OF MAILING
13	
14	I hereby certify that this OPPOSER'S NOTICE OF RELIANCE PURSUANT TO RULE 2.122(d)(2)
17	AND 2.122(e) is being deposited with the U.S. Postal Service in a sealed envelope as first class mail with postage thereon fully prepaid and addressed to the Commissioner for Trademarks, Trademark Trial and Appeal
15	
15	Board, 2900 Crystal Drive, Arlington, VA 22202-3514, on the below date
16	
	Date: HUGUST 20 2004 Sullley Round
16	Board, 2900 Crystal Drive, Arlington, VA 22202-3514, on the below date
16 17	Board, 2900 Crystal Drive, Arlington, VA 22202-3514, on the below date  Date: CERTIFICATE OF SERVICE  I hereby certify that on the 20th day of August, 2004, a true copy of the foregoing OPPOSER'S NOTICE OF RELIANCE PURSUANT TO RULE 2.122(d)(2) AND 2.122(e) was served on counsel for
16 17 18	Board, 2900 Crystal Drive, Arlington, VA 22202-3514, on the below date  Date: CERTIFICATE OF SERVICE  I hereby certify that on the 20th day of August, 2004, a true copy of the foregoing OPPOSER'S NOTICE OF RELIANCE PURSUANT TO RULE 2.122(d)(2) AND 2.122(e) was served on counsel for Applicant via first-class mail to:
16 17 18 19	Board, 2900 Crystal Drive, Arlington, VA 22202-3514, on the below date  Date: CERTIFICATE OF SERVICE  I hereby certify that on the 20th day of August, 2004, a true copy of the foregoing OPPOSER'S NOTICE OF RELIANCE PURSUANT TO RULE 2.122(d)(2) AND 2.122(e) was served on counsel for Applicant via first-class mail to:  Stanley C. Macel, III, Esq. Connolly Bove Lodge & Hutz LLP
16 17 18 19 20	Board, 2900 Crystal Drive, Arlington, VA 22202-3514, on the below date  Date: CERTIFICATE OF SERVICE  I hereby certify that on the 20th day of August, 2004, a true copy of the foregoing OPPOSER'S NOTICE OF RELIANCE PURSUANT TO RULE 2.122(d)(2) AND 2.122(e) was served on counsel for Applicant via first-class mail to:  Stanley C. Macel, III, Esq.
16 17 18 19 20 21	Date: CERTIFICATE OF SERVICE  I hereby certify that on the 20th day of August, 2004, a true copy of the foregoing OPPOSER'S NOTICE OF RELIANCE PURSUANT TO RULE 2.122(d)(2) AND 2.122(e) was served on counsel for Applicant via first-class mail to:  Stanley C. Macel, III, Esq. Connolly Bove Lodge & Hutz LLP 1007 North Orange Street Wilmington, DE 19899 Facsimile No. 302.658.5614
16 17 18 19 20 21 22	Date: CERTIFICATE OF SERVICE  I hereby certify that on the 20th day of August, 2004, a true copy of the foregoing OPPOSER'S NOTICE OF RELIANCE PURSUANT TO RULE 2.122(d)(2) AND 2.122(e) was served on counsel for Applicant via first-class mail to:  Stanley C. Macel, III, Esq. Connolly Bove Lodge & Hutz LLP 1007 North Orange Street Wilmington, DE 19899 Facsimile No. 302.658.5614
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THE UNITED STATES OF AMERICA

TO ALL TO WHOM THESE PRESENTS SHALL COME?

UNITED STATES DEPARTMENT OF COMMERCE

**United States Patent and Trademark Office** 

August 17, 2004

THE ATTACHED U.S. TRADEMARK REGISTRATION 2,048,831 IS CERTIFIED TO BE A TRUE COPY WHICH IS IN FULL FORCE AND EFFECT WITH NOTATIONS OF ALL STATUTORY ACTIONS TAKEN THEREON AS DISCLOSED BY THE RECORDS OF THE UNITED STATES PATENT AND TRADEMARK OFFICE.

REGISTERED FOR A TERM OF 10 YEARS FROM April 01, 1997 SECTION 8 & 15
SAID RECORDS SHOW TITLE TO BE IN:
REGISTRANT

By Authority of the

COMMISSIONER OF PATENTS AND TRADEMARKS

M. K. HAWKINS

**Certifying Officer** 

Int. Cl.: 9

Prior U.S. Cls.: 21, 23, 26, 36 and 38

Reg. No. 2,048,831

### United States Patent and Trademark Office

Registered Apr. 1, 1997

### TRADEMARK PRINCIPAL REGISTER

#### **OPTI**

OPTIMIZE TECHNOLOGIES, INC. (OREGON CORPORATION) 13993 FIR STREET OREGON CITY, OR 97045

FOR: LIQUID TRANSFER COMPONENTS OF CHEMICAL ANALYSIS EQUIPMENT, NAMELY HIGH-PERFORMANCE LIQUID CHROMATOGRAPHY (HPLC) - PISTONS AND PLUNGER SEALS FOR PUMPS; SOLVENT RESERVOIR FILTERS; IN-LINE FILTERS;

TUBING; CHECK VALVES; PRIME AND PURGE VALVES; PUMP HEADS, PRECOLUMN FILTERS; AND FITTINGS FOR TUBING, IN CLASS 9 (U.S. CLS. 21, 23, 26, 36 AND 38).

FIRST USE 9-15-1985; IN COMMERCE 9-15-1985.

SER. NO. 75-035,122, FILED 12-21-1995.

CONNIE M. JUDGE, EXAMINING ATTORNEY



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UNITED STATES DEPARTMENT OF COMMERCE

**United States Patent and Trademark Office** 

August 17, 2004

THE ATTACHED U.S. TRADEMARK REGISTRATION 2,100,804 IS CERTIFIED TO BE A TRUE COPY WHICH IS IN FULL FORCE AND EFFECT WITH NOTATIONS OF ALL STATUTORY ACTIONS TAKEN THEREON AS DISCLOSED BY THE RECORDS OF THE UNITED STATES PATENT AND TRADEMARK OFFICE.

REGISTERED FOR A TERM OF 10 YEARS FROM September 30, 1997 SECTION 8 & 15
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By Authority of the

COMMISSIONER OF PATENTS AND TRADEMARKS

M. K. HAWKINS

**Certifying Officer** 

Int. Cl.: 9

Prior U.S. Cls.: 21, 23, 26, 36 and 38

Reg. No. 2,100,804

United States Patent and Trademark Office

Registered Sep. 30, 1997

#### TRADEMARK PRINCIPAL REGISTER

#### **OPTI-GUARD**

OPTIMIZE TECHNOLOGIES, INC. (OREGON CORPORATION)
13993 FIR STREET
OREGON CITY, OR 97045

FOR: PRECOLUMN FILTERS AND GUARD COLUMNS FOR HIGH-PERFORMANCE

LIQUID CHROMATOGRAPHY (HPLC), IN CLASS 9 (U.S. CLS. 21, 23, 26, 36 AND 38).
FIRST USE 1-0-1994; IN COMMERCE 1-0-1994.

SER. NO. 75-035,264, FILED 12-21-1995.

CONNIE M. JUDGE, EXAMINING ATTORNEY



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### THE UNITED STATES OF AMERICA

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**United States Patent and Trademark Office** 

August 17, 2004

THE ATTACHED U.S. TRADEMARK REGISTRATION 2,023,739 IS CERTIFIED TO BE A TRUE COPY WHICH IS IN FULL FORCE AND EFFECT WITH NOTATIONS OF ALL STATUTORY ACTIONS TAKEN THEREON AS DISCLOSED BY THE RECORDS OF THE UNITED STATES PATENT AND TRADEMARK OFFICE.

REGISTERED FOR A TERM OF 10 YEARS FROM December 17, 1996 SECTION 8 & 15 SAID RECORDS SHOW TITLE TO BE IN: REGISTRANT

By Authority of the

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M. K. HAWKINS

**Certifying Officer** 

Int. Cl.: 9

Prior U.S. Cls.: 21, 23, 26, 36 and 38

**United States Patent and Trademark Office** 

Reg. No. 2,023,739

Registered Dec. 17, 1996

### TRADEMARK PRINCIPAL REGISTER

#### **OPTI-MAX**

OPTIMIZE TECHNOLOGIES, INC. (OREGON CORPORATION) 13993 FIR STREET OREGON CITY, OR 97045

FOR: CHECK VALVES FOR HIGH-PER-FORMANCE LIQUID CHROMATOGRAPHY (HPLC) PUMPS, IN CLASS 9 (U.S. CLS. 21, 23, 26, 36 AND 38).

FIRST USE 0-0-1990; IN COMMERCE 0-0-1990.

SER. NO. 75-035,134, FILED 12-21-1995.

CONNIE M. JUDGE, EXAMINING ATTORNEY



THE UNITED STATUES OF AMERICA

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**United States Patent and Trademark Office** 

August 18, 2004

THE ATTACHED U.S. TRADEMARK REGISTRATION 2,023,740 IS CERTIFIED TO BE A TRUE COPY WHICH IS IN FULL FORCE AND EFFECT WITH NOTATIONS OF ALL STATUTORY ACTIONS TAKEN THEREON AS DISCLOSED BY THE RECORDS OF THE UNITED STATES PATENT AND TRADEMARK OFFICE.

REGISTERED FOR A TERM OF 10 YEARS FROM December 17, 1996 SECTION 8 & 15 SAID RECORDS SHOW TITLE TO BE IN: REGISTRANT

By Authority of the

COMMISSIONER OF PATENTS AND TRADEMARKS

N. WILLIAMS

**Certifying Officer** 

Int. Cl.: 9

Prior U.S. Cls.: 21, 23, 26, 36 and 38

Reg. No. 2,023,740

**United States Patent and Trademark Office** 

Registered Dec. 17, 1996

### TRADEMARK PRINCIPAL REGISTER

### **OPTI-SEAL**

OPTIMIZE TECHNOLOGIES, INC. (OREGON CORPORATION)
13993 FIR STREET
OREGON CITY, OR 97045

FOR: PISTON AND PLUNGER SEALS FOR HIGH-PERFORMANCE LIQUID CHROMATOG-

RAPHY (HPLC) PUMPS, IN CLASS 9 (U.S. CLS. 21, 23, 26, 36 AND 38).

FIRST USE 0-0-1988; IN COMMERCE 0-0-1988.

SER. NO. 75-035,135, FILED 12-21-1995.

CONNIE M. JUDGE, EXAMINING ATTORNEY



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**United States Patent and Trademark Office** 

August 17, 2004

THE ATTACHED U.S. TRADEMARK REGISTRATION 2,107,751 IS CERTIFIED TO BE A TRUE COPY WHICH IS IN FULL FORCE AND EFFECT WITH NOTATIONS OF ALL STATUTORY ACTIONS TAKEN THEREON AS DISCLOSED BY THE RECORDS OF THE UNITED STATES PATENT AND TRADEMARK OFFICE.

REGISTERED FOR A TERM OF 10 YEARS FROM October 21, 1997

SECTION 8 & 15

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REGISTRANT

By Authority of the

COMMISSIONER OF PATENTS AND TRADEMARKS

M. K. HAWKINS

**Certifying Officer** 

Int. Cl.: 9

Prior U.S. Cls.: 21, 23, 26, 36 and 38

United States Patent and Trademark Office

Corrected

Reg. No. 2,107,751
Registered Oct. 21, 1997
OG Date Apr. 7, 1998

#### TRADEMARK PRINCIPAL REGISTER

#### **OPTIMIZE TECHNOLOGIES**

OPTIMIZE TECHNOLOGIES, (OREGON CORPORATION)
13993 FIRST STREET
OREGON CITY, OR 97045

NO CLAIM IS MADE TO THE EXCLUSIVE RIGHT TO USE "TECHNOLOGIES", APART FROM THE MARK AS SHOWN.

FOR: LIQUID TRANSFER COMPONENTS OF CHEMICAL ANALYTIC EQUIPMENT, NAMELY, HIGH-PERFORMANCE LIQUID CHROMATOGRAPHY (HPLC) - TUBING; FITTINGS; PACKED (GOLUMS) \* COLUMNS \*; GUARD COLUMNS; PRECOLUMN FILTERS; SEALS; PUMP COMPONENTS, NAMELY, PUMPHEADS, PISTONS, PLUNGERS AND SEALS; CHECK VALVES; PRIMING VALVES; PRIMING ADAPTERS; DETECTOR SOURCE LAMPS; FILTERS; MANIFOLD BALL SEALS; (CHECK VALVES; -PRIMING.

"VALVES: PRIMING TADAPTERS: DETECTOR. SOURGE TAMPS: PILTERS:
MANIFOLD-BALL SEALS:] INJECTOR
COMPONENTS. NAMELY, SYRINGES,
INEEDLES.] SEALS AND NEEDLES;
PRESSURE REGULATORS: SAMPLE
PROCESSOR COMPONENTS. NAMELY,
SYRINGES, NEEDLES, SEALS, WASHERS AND FRITS, ALL FOR HPLC IN.
STRUMENTS: HPLC MAINTENANCE
KITS (INCLUDING) \* COMPRISING \*
INLET CARRIDGE CHECK VALVES,
OUTLET CARRIDGE CHECK
VALVES, REPLACEMENT CAR.
TRIDGES, PISTONS, PUMP SEALS, FIL.
TING KITS COMPRISING TUBING,
NUTS AND FETRULES. IN CLASS 9
(U.S. CLS. 21, 23, 26, 36 AND 38).
FIRST USE 10.13-1085: IN COMMERCE

FIRST USE 10-15-1985; IN COMMERCE 11-1-1985.

SER. NO. 75-035,268, FILED 12-21-1995.

In testimony whereof I have hereunto set my hand and caused the seal of The Patent and Trademark Office to be affixed on Apr. 7, 1998.

COMMISSIONER OF PATENTS AND TRADEMARKS

Int. Cl.: 9

Prior U.S. Cls.: 21, 23, 26, 36, and 38

United States Patent and Trademark Office

Reg. No. 2,107,751

Registered Oct. 21, 1997

### TRADEMARK PRINCIPAL REGISTER

#### **OPTIMIZE TECHNOLOGIES**

OPTIMIZE TECHNOLOGIES, INC. (OREGON CORPORATION)
13993 FIRST STREET
OREGON CITY, OR 97045

FOR: LIQUID TRANSFER COMPONENTS OF CHEMICAL ANALYTIC EOUIPMENT. HIGH-PERFORMANCE NAMELY LIQUID CHROMATOGRAPHY (HPLC) - TUBING; FIT-TINGS; PACKED COLUMNS; GUARD COL-UMNS; PRECOLUMN FILTERS; SEALS; PUMP COMPONENTS, NAMELY PUMPHEADS, PIS-TONS, PLUNGERS AND SEALS; CHECK VALVES; PRIMING VALVES; PRIMING ADAPTERS; DETECTOR SOURCE LAMPS; FILTERS; MANIFOLD BALL SEALS; CHECK-VALVES; PRIMING -VALVES; PRIMING ADAPTERS; DETECTOR SOURCE- LAMPS; FILTERS; MANIFOLD BALL-SEALS; INJEC-TOR COMPONENTS, NAMELY SYRINGES. NEEDLES, SEALS AND NEEDLES; PRESSURE

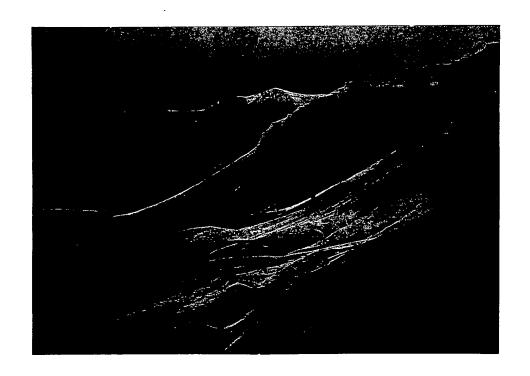
REGULATORS; SAMPLE PROCESSOR COMPO-NENTS, NAMELY SYRINGES, NEEDLES, SEALS, WASHERS AND FRITS, ALL FOR HPLC INSTRUMENTS; HPLC MAINTENANCE KITS INCEUDING INLET CARTRIDGE CHECK VALVES, **OUTLET** CARTRIDGE VALVES, CHECK REPLACEMENT TRIDGES, PISTONS, PUMP SEALS, FILTERS AND FITTINGS; AND HPLC FITTING KITS COMPRISING TUBING, NUTS AND FER-RULES, IN CLASS 9 (U.S. CLS. 21, 23, 26, 36 AND 38).

FIRST USE 10-15-1985; IN COMMERCE 11-1-1985.

NO CLAIM IS MADE TO THE EXCLUSIVE RIGHT TO USE "TECHNOLOGIES", APART FROM THE MARK AS SHOWN.

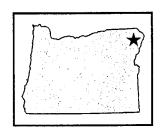
SN 75-035,268, FILED 12-21-1995.

PETER CATALDO, EXAMINING ATTORNEY



### **OPTIMIZE** TECHNOLOGIES

Finest Liquid Chromatography &
Fluid Handling
Components
1997-1998



On The Cover:

IMNAHA RIVER CANYON, OREGON

Photograph by Larry N. Olson

Our cover photograph shows the Imnaha River canyon, in Northeastern Oregon. This stunning landscape stretches from the headwaters of the Imnaha River, nestled in the highest peaks of the Wallowa Mountains, down to the bottom of Hells Canyon, where the Imnaha meets the Snake River. The entire run, including the south fork, is protected under the Wild and Scenic Rivers Act, which provides the most comprehensive protection accorded any U.S. River.

This image is included in *Oregon Rivers*, an exhibit-format book to be published by Westcliffe in the Fall of 1997. The book features color photographs by Larry N. Olson, depicting the fifty five wild and scenic rivers in Oregon, complimented with text written by John Daniel, essayist, poet, environmental journalist and winner of the 1993 Oregon Book Award for Creative Nonfiction. The primary focus of *Oregon Rivers* is to raise public awareness about the fragility of Oregon's protected rivers and their ecosystems, and of the need for continued vigilance if they are to be preserved.

Larry N. Olson has been a professional wilderness photographer for over twenty five years. His photographs have been published in *Sierra*, *Wilderness*, *The Nature Conservancy* and *Audubon*. Limited edition photographs, hand-printed by Larry, as well as prepublication copies of *Oregon Rivers*, are available from his studio. For more information, please call (503) 635-5288.



Imnaha River Canyon, Oregon

@ Larry N. Okon



#### To Our Valued Customers:

Somewhere out there, working deep inside the basement lab of a pharmaceutical company's head office, are some chromatographers who have never heard of Optimize Technologies. These chemists still do things the old-fashioned way; they painstakingly rebuild check valves, they prime their HPLC pumps with priming valves that are best operated by people blessed with an extra hand, and worst of all they work long, long hours, and sometimes on weekends. These are the same chemists that have racks of samples lined up and ready for analysis, but can't get to them because they have to spend too much of their time on system maintenance; they're busy tweaking plumbing, diagnosing component failures, or waiting for a technician to show up.

When I started Optimize Technologies 12 years ago, I had the chemists in that basement lab in mind; I knew there had to be a better way. At Optimize, we spend every day looking for better ways to bridge the gap between the chemistry and the equipment. Many of our products are born as a result of solving problems brought to us by customers like you. We strive to bring you the best possible value by providing responsive service and innovative products. When you install HPLC components from Optimize, you join a growing number of researchers who have discovered that when it comes to HPLC consumables, precision and quality have a tremendous impact on the performance and reliability of your HPLC system. By using only the best components available, you'll enjoy smoother, more reliable instrument performance between scheduled maintenance periods. That way, you get more time to concentrate on more important things, like your research (and your weekends!)

I once heard a customer describe Optimize as "the best kept secret in the HPLC industry." I think this description fits us very well, but not because we're trying to be clandestine. We don't spend a lot of money on advertising; we'd rather focus on the research and development of new products that will make your lab life easier, and get you home on time at the end of the day. Innovative products like OPTI-GUARD™ Guard Columns and OPTI-MAX® Cartridge Check Valves offer precision-machined solutions that save you time by performing reliably and minimizing problems related to component changeover. Apparently, Optimize is not as much of a secret as it used to be. Optimize components are being incorporated as original equipment on new HPLC systems from several manufacturers, and we've seen strong growth year after year as more and more chromatographers switch their systems to Optimize.

Things have changed a lot at Optimize in 12 years, but our mission remains the same: to design and manufacture the highest quality HPLC components and accessories available, and to stand behind them with responsive customer service and technical support, so that we may earn your business, and your trust. Let us know how we're doing — call us, send e-mail or visit our web page, and challenge us to find solutions to your unique HPLC liquid handling questions.

Thank you for your continued support and patronage.

Sincerely,

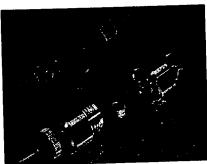
Douglas W. Ford

President

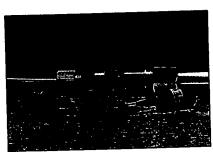




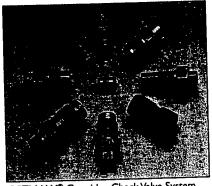
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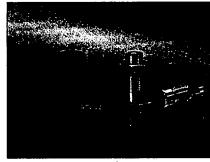
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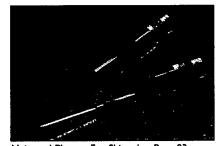
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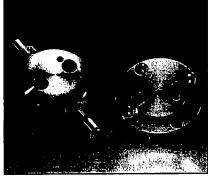
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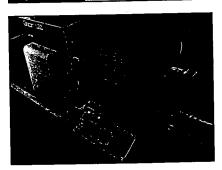


OPTI-PRIME™ Pump Head and Bushing For Waters, Page 99













When Doug Ford founded Optimize Technologies, Inc. in 1985, his plan was to build a unique manufacturing company on a simple idea. Over a decade later, this idea is still the heart of our philosophy at Optimize: to offer the most finely made HPLC components available, and to stand behind them with the most responsive and effective customer service in the industry.

### Precision and Value By Design

Optimize HPLC components are used around the world by researchers who prefer to spend more time on their chromatography, and less time fixing their instruments. In your laboratory, time is an important factor. Time is fundamental to your chromatography; it is the axis along which mixtures of analytes are resolved. Time is also fundamental to a concept more fiscal than chemical: your bottom line. When an HPLC system is rendered inoperative by a maintenance problem, the opportunity cost of lost analysis time can add up very quickly, and can far exceed the cost of the parts that caused the problem to begin with.

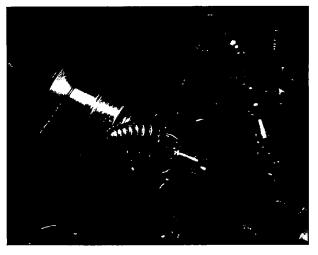
Each year, we hear from more and more scientists who have discovered the benefits of Optimize innovation. When it comes to spare parts, our customers know there is a difference: using HPLC components of superior quality and unsurpassed reliability means less time spent on instrument maintenance, and more time spent on what's really important — your research.

### Optimize R&D

At Optimize, we place a high priority on research and development. Our R&D team of engineers and chemists continually develops innovative solutions to fresh analytical challenges. New products are evaluated and thoroughly tested in our laboratory under a variety of operational conditions, to confirm that they meet our exacting standards for performance and reliability. Our goal is to ensure that the components you buy from Optimize work the first time, every time.

Optimize R&D benefits from a unique breadth of experience beyond the HPLC consumables market. We frequently partner with other firms such as pharmaceutical companies and instrument manufacturers to design and develop components and larger assemblies on an OEM basis. Our capacity for innovative design and custom manufacture allows us to engage in very productive and mutually beneficial partnerships with these companies.

### ABOUT OPTIMIZE





### Precision Machining

Only by individually machining each component we make can we achieve the tight tolerances, consistent threads and surface finishes that set our products apart. Everything from the smallest PEEK double-tight ferrule to a complete pump head assembly is precision-machined in a state-of-the-art manufacturing environment. Every polymeric fitting, ferrule and cartridge you buy from Optimize will be free of mold lines, thread inconsistencies and other problems associated with mold-based production techniques.

### Quality Control: One Part at a Time

From conception to manufacture, our entire product development cycle is geared toward production of the most reliable and well-made components available. Quality control is a vital step in this cycle. Our Statistical Process Control (SPC) system enables us to closely monitor the quality of our manufacturing process. By continual analysis of manufacturing trends while the parts are in process, part-to-part variation can be minimized. When it comes to quality, there are no shortcuts: every part we manufacture is guaranteed to meet the standards of reliability and performance you can always expect from Optimize.

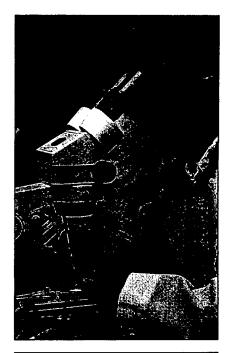
### How Can We Help You?

At Optimize, customer service is not a department — it's our business. Our integrated team of engineers, chemists, machinists, quality assurance professionals and technical support specialists work together to answer your tough questions and to help you meet your analytical challenges. Need a part number, a price or a new catalog? Call customer service at 800-669-9015. Have a problem with a particular application, a maintenance question, or need solvent compatibility information? Ask for a technical support specialist. Whether you are an end-user or a purchasing agent, support professionals are ready to help you with informative product advice, and fast order entry.

Optimize also offers HPLC maintenance training seminars both in the U.S. and worldwide. Seminar topics include periodic maintenance and system optimization, and can be individually tailored to audience needs. Call for more details about a seminar near you.

#### Our Guarantee

HPLC components from Optimize are the highest quality accessories of their type you can buy, and we guarantee it. Each component we make is designed to meet or exceed original equipment specifications, and carries the hallmark of Optimize machining quality. Every Optimize product we sell must meet these criteria, and every product carries our full guarantee of satisfaction.

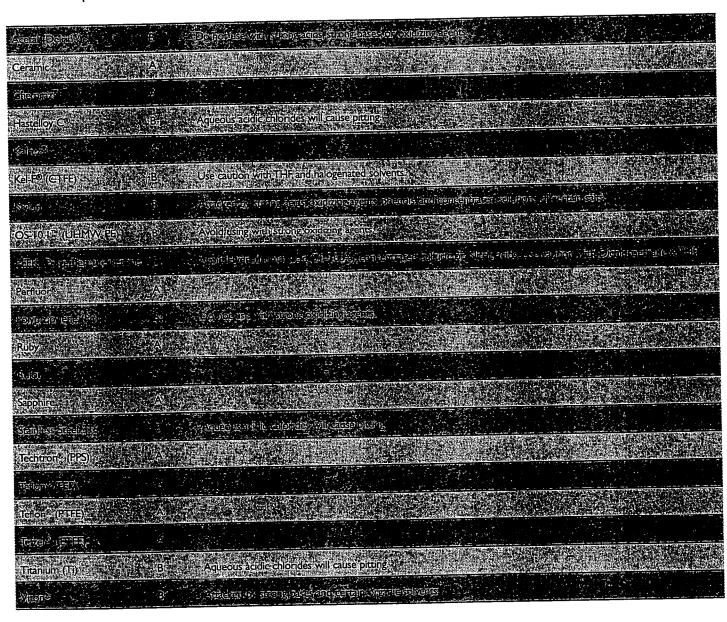






### SOLVENT COMPATIBILITY GUIDE

HPLC components and accessories from Optimize are manufactured using the materials listed in this solvent compatibility chart. Each material earns a solvent compatibility grade of A or B, based on that material's resistance to chemical attack. Grade A materials are completely resistant to common HPLC solvents and reagents, while Grade B materials are susceptible to chemical attack under certain conditions. Specific cautionary information is provided for all grade B materials. For more information on compatibility for a specific solvent, please call our Technical Support Department at 800-669-9015.



This information is current and to date, and is presented as a general guide to solvent compatibility. It is presented without any guarantee, liability or warranty of any kind, neither expressed nor implied.

### RADEMARKS

### **TRADEMARKS**

HPLC FIRST AID KIT(S)™, ITB-12™, OPTI-DRAW™, OPTI-GUARD™, OPTI-LOK™, OPTI-PEEK™, OPTI-PRIME™, OPTI-SOLV™, OS-10.1™, Optimize Technologies™, the Optimize Technologies Raindrop Logo, FREE-TURN™ and the Free-Turn Arrow Logo are Trademarks of Optimize Technologies, Inc.

The OPTI®- prefix, OPTI-MAX® and OPTI-SEAL® are Registered Trademarks of Optimize Technologies, Inc.

Patented Optimize Products:

OPTI-GUARD™ Imm & 3mm Guard Columns

U.S. Pat. No. 5,525,303

OPTI-LOK™ Adjustable Adapter

U.S. Pat. No. 5,525,303

OPTI-SOLV™ Mini Filter

U.S. Pat. No. 5,525,303

OPTI-PRIME™ Priming Valve

U.S. Pat. No. 5,616,300

Kromasil™ is a Trademark of Eka-Nobel.

Rulon™ is a Trademark of Dixon Industries.

Delta Prep™ and WISP™ are Trademarks of Waters Corporation.

IsoChrom™ is a Trademark of Spectra-Physics Analytical, Inc.

Chemraz® is a Registered Trademark of Greene, Tweed & Co.

Delrin®, Kalrez®, Teflon®, Tefzel®, and Viton® are Registered Trademarks of E.I. du Pont de Nemours & Co.

Hastelloy C® is a Registered Trademark of Cabot Corporation.

Kel-F® is a Registered Trademark of the 3M Company.

LaChrom® is a Registered Trademark of the Merck Hitachi Company.

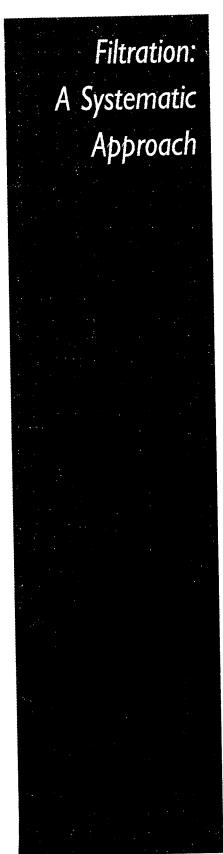
Perfluor® is a Registered Trademark of the Furon Co.

Techtron® is a Registered Trademark of DSM Engineering Plastic Products, Inc.

MS-DOS®, Windows® and Microsoft® are U.S. Registered Trademarks of Microsoft Corporation.

All company names listed in this catalog are trademarks or registered trademarks of their respective owners.

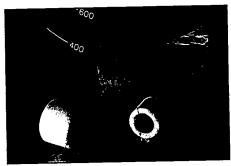
### REFERENCE



Obtaining reliable, consistent results from your HPLC system requires continuous consideration of chemical and mechanical factors that can negatively impact system performance. For your laboratory to remain competitive, instrument down-time must be kept to an absolute minimum. Many common instrument problems are caused by the presence of particulate contamination introduced by the mobile phase or as a by-product of system operation. Particulates can cause a variety of maintenance headaches, including check valve failure, excessive wear of the piston and seal, and high back-pressure due to frit blockage. A consistent, holistic approach to filtration is an effective means of minimizing particulates in your flow path. It is also a vital precaution that will keep your chromatograph working for you (and not the other way around).

### Mobile Phase

The first and perhaps easiest place to prevent particulate contamination is in the mobile phase. Buffer salts, improperly cleaned glassware, microbial contamination and inadequate pre-filtering procedures are all potential sources of particulates. Solvent manufacturers adequately filter HPLC-grade solvents prior to bottling; ideally, there should be no need for additional pre-filtering in your laboratory if your mobile phase contains only HPLC-grade solvents. Mobile phases prepared with buffer salts or other solid reagents should be filtered prior to use, however. A 0.2 or 0.45 µm membrane filter is recommended for this filtration step. It is also a good idea to discard the first few milliliters of solvent that pass through the filter.



Solvent reservoir filters are a useful filtration accessory, providing a first line of protection as the solvent enters the system. OPTI-SOLV<sup>™</sup> Solvent Reservoir Filters (page 14) are an excellent choice for this application; OPTI-SOLV secures your inlet tubing at the bottom of the solvent reservoir without the use of tools or fittings, and is machined from PTFE and Titanium. This well-swept filter ensures access to all but the last few milliliters of solvent, and will not trap bubbles or leach extractable contaminants. Solvent reservoir filters are available with a choice of frit porosities. For analytical HPLC applications, a 2 µm frit is the best choice, while a larger porosity frit such as 10 µm should be selected for flow rates exceeding 10 mL/min.

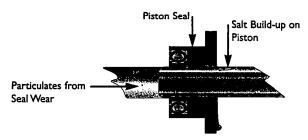
### Piston Seals

Piston seals are a common source of particulate contamination in the flow stream. As the piston moves back and forth through the piston seal at high pressure, seal fragments can slough off from the mating surface of the seal. The size and shape of shed particles will vary depending upon the nature and quality of the material from which the seal is made. These variables are important to consider, as they directly impact the ease with which shedding particles can be removed from the flow path. Particles too small to be trapped by a 2  $\mu$ m filter, or large enough to be trapped within the frit but below the surface, will cause the most trouble.

The exclusive polymer blends used in our ITB™ and OPTI-SEAL® piston seals are specifically formulated to shed particles large enough to be trapped at the surface of a 2 µm frit. Because particulates in the pump head can cause increased friction and abrasion between the piston and seal, excessive seal wear is both a source and a symptom of particulate contamination.

### REFERENCE

The build up of precipitated salts and other particulates within the pump can be minimized by regular flushing with non-buffered mobile phase. Some pumps include a piston flushing utility that allows the piston to be rinsed on the low pressure side of the seal while the pump is in use. Daily piston flushing can help prevent salt precipitation on the surface of the piston and can prolong the life of both the piston and piston seal.



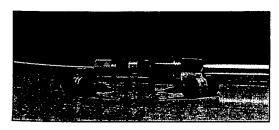
For most effective protection from seal shedding particulates, we recommend the use of an in-line filter installed downstream from the pressure transducer but prior to the injection valve or autosampler. OPTI-SOLV In-Line Filters (page 12) are a convenient and cost-effective solution for most in-line filtering applications, providing rapid access to replaceable frits without requiring disconnection of attached tubing.

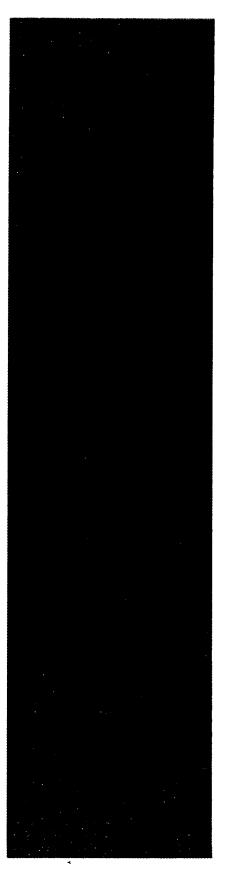
Some instrument manufacturers supply check valve assemblies equipped with a filter element on the outlet side. While a filter frit in this location may seem to be a better option than no filter at all, this arrangement can be problematic. First, the use of an in-line filter upstream of the pressure transducer complicates pressure-based diagnosis of instrument performance. Second, placement of a frit this close to the outlet check valve causes particulates to build up in a location where they are likely to cause problems. Check valve failure is often brought on by the adherence of contaminants to the surface of the ball, causing it to stick or seal improperly. In-line filtration of seal debris and other particulates downstream from the pressure transducer will minimize the chance of check valve contamination and will not complicate system diagnostics.

### Precolumn Filtration

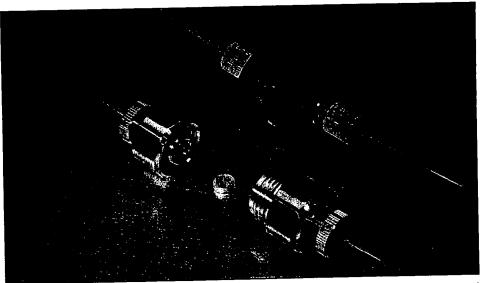
Two more potential sources of particulate contamination can cause trouble in the region beyond the injection device but before the analytical column. First, the injection device itself can introduce particles resulting from rotor seal wear or the coring of vial septa. Second, contamination may be introduced by the sample matrix. The analytical column can be damaged by irreversibly retained contaminants in the sample matrix, or by salts that precipitate due to incompatibilities between the sample matrix and mobile phase.

Where practical, most of these types of contamination can be addressed in the sample preparation procedure. In cases where additional filtration is required between the injector and column, a low-volume, low-dispersion filter and/or guard column must be employed. OPTI-SOLV Mini Filters (page 13) and OPTI-GUARD™ Guard Columns (pages 32-33) work extremely well for applications requiring precolumn protection. Our patented, automatically adjusting tube stem design assures zero-dead-volume connections and low dispersion in an area where excessive dead volume can literally make or break your assay.





### OPTI-SOLV™ IN-LINE FILTER



In HPLC, the removal of particulate matter from the flow path is essential for proper operation of the instrument, and for protection of vital and expensive components. The OPTI-SOLV™ In-Line Solvent Filter was designed to protect your HPLC system from foreign particles, helping you to minimize system down-time and operating costs. An OPTI-SOLV In-Line Filter installed between the pump and injection valve or autosampler can protect these expensive components from seal wear particles and other debris. The OPTI-SOLV features a unique swivel design that allows access to the filter compartment without removal of the connecting tubing; once the tubing and fittings are connected to the stainless steel inserts, there is no need to remove them again. Holders constructed from PEEK are hand-tightened, making frit changes a snap.

### OPTI-SOLV M In-Line Solvent Filter

OPTI Down #	Description		Price
OPTI-Part #	Description	go &	
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	Adams Pakitancana		
WINCOLOUS NAMES ASSESSED.		70.10 900.0710.000	

All of the above include holder, fittings and 2 filter elements.



# Total swept volume is 0.2 µL for minimal extra column effects 316 Stainless Steel for total solvent compatibility FEP sealing surface and 316 Stainless Steel frit PEEK knob with gorilla-grip knurls

### FEATURES

- Use with any HPLC system.
- Hand-tight PEEK holder.
- Wrench-tight SS holder.
- Inserts are designed to allow for different filter thicknesses.
- Swivel Insert allows tubing to remain connected during filter replacement.

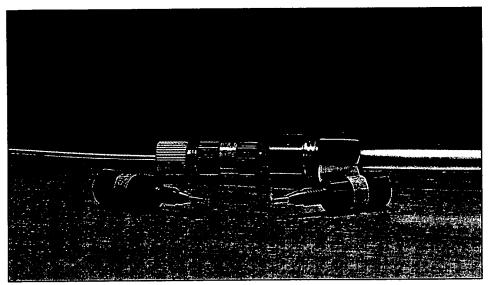
### SPECIFICATIONS

- Outside dimensions:
   I" diameter x 1 1/4" long.
- 0.10" diameter through-hole, 0.2 µL flow-through volume.
- 10-32 Parker-style female port.
- 6,000 psi pressure rated.
- Available in 0.5 μm and 2 μm porosities.

#### MATERIALS

- 316 Stainless Steel
- PEEK
- Teflon®

### OPTI-SOLV™ MINI FILTER



The OPTI-SOLV™ Mini Filter is a hand-tight, automatically adjustable in-line filter that can extend the life of your analytical column. It can be used anywhere between the pump and detector to catch particulates, or can replace your guard column. Perfect zero-dead-volume connections are obtained every time thanks to our patented automatic tube-stop depth adjustment. Depth filtering elements allow for exceptionally large throughput with no band spreading or loss in performance. OPTI-SOLV is the completely disposable, holder-free solution to your filtering needs.

### OPTI-SOLV™ Mini Filter

OPTI-Part #	Description	Color	Price
15 (18 + 15 1) C	্রিকার প্রাক্তির প্রাক্তির প্রাক্তির বিশ্বর	elec.	
9/040034(0)#6	्रे के किया के	Spage 3	

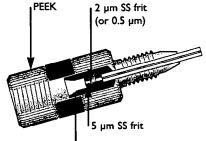
### FEATURES SPECIFICATIONS

- · No holder needed.
- · No band spreading.
- Compatible with any 10-32 column.
- Patented 2-piece design automatically adjusts to fit all brands of columns and allows perfect zero-deadvolume connections.
- · Completely disposable.
- · Depth filtration design.

- Overall dimensions:
- 3/8" diameter x 1" long.
- 0.10" through-hole.
- Less than 1.5 µL internal flow-through volume.
- 6,000 psi pressure rated.
- Compatible with all 10-32 female ports (except Rheodyne injector port).
- Depth Filtration Design.

### MATERIALS

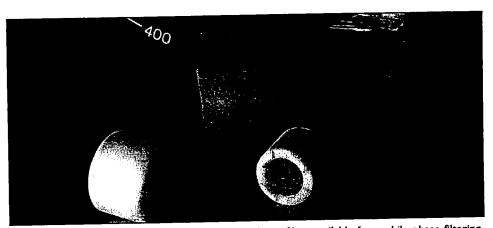
- PEEK
- 316 Stainless Steel



2-piece design automatically adjusts to fit all brands of columns

U.S. PATENT NO. 5,525,303

### SOLVENT RESERVOIR FILTERS



The OPTI-SOLV™ Solvent Reservoir Filter is the finest filter available for mobile phase filtering. The unique design requires no assembly or fittings for installation, and remains at the bottom of the solvent bottle while allowing unrestricted solvent access. You won't have to force your inlet tubing over a stem — simply insert the tubing into the Teflon® housing until it bottoms out. A unique conical internal flowpath assures that all air is readily purged from the filter and housing.

### OPTI-SOLY TM Solvent Reservoir Filter

Analytical Filters for 1/16" OD Tubing

OPTI-Part #	Description	100 NAV (34 )	Price
\$10-04-00079	2 micron		
10.04.00080	25.48 3 #2 micron 5/Pk		
10-04-00081	10 micron		語外語
10-04-00082	10 micron, 5/Pk		持法等金

#### Analytical Filters for 1/8" OD Tubing

10-04-00047 2 micron 2 micron
10-04-00050 \$42/micron:5/Pk
"有一个一个大,在大学的,但是一个大学的,这是一个人,这个人是是一个的人的人,我们就是一个人的人,我们就是一个人的人,也不是一个人的人。""我们,我们就是一个人
10-04-04001
10-04-00053 10 micron, 5/Pk

#### Analytical Filters for 3/16" OD Tubing (Waters Style)

10-04-00054	micronal automotive and the second se
210-04-00056 TV SA	micron/S/PI
10-04-00057	0 micron
	0 micron, 5/Pk
10-04-00058	U micron, 37 K

#### Preparatory Filters for 1/8" OD Tubing

		water the female and the state of the state of	are a contract of the contract	net receive the second second second
32 kg:0 - 2 m	icron (40.454)	- 200 92		A SUMMARIA
Section 31	CENTER OF STATE		31 St (2) 31 St (2)	
\$2.50 A U	ilcron, Strk 31, 687	A STATE OF THE STA	CONTRACTOR OF THE PARTY OF THE	
10	micron			
10	micron, 5/Pk			
	2/ñ 10	2 micron 5/Pk 10 micron 10 micron	2/microh: 5/Pk 10 micron	2.micron S/Pk 10 micron

#### Preparatory Filters for 3/16" OD Tubing (Waters Style)

			200 110 0015
10-04-00070		10 micron, 5/Pk	
10-04-00069		10 micron	
10-04-00068		2 micron, 5/Pk	
10-04-00066	1-0-61	2 micron	
Value of the Control	CONTRACTOR AND	A TOTAL CONTRACTOR OF THE PARTY	

### **FEATURES**

- Easy to install requires no tools or fittings.
- Teflon® and Titanium ensure inert environment.
- Purges quickly and completely.
- Offers smooth flow path, preventing trapped bubbles that can cause pump cavitation.
- Cost-efficient, as all mobile phase can be drawn from the solvent reservoir bottle.

#### SPECIFICATIONS

- 2 and 10 micron analytical and preparatory filters for 1/16", 1/8" and 3/16" OD tubing.
- 1/16" analytical filter fits a 1 liter solvent bottle that has an inside neck diameter of at least 3/4".
- Preparatory filter gives a larger surface area and is intended for all 4 liter solvent bottles with an inside neck diameter of at least 1".
- 10 µm porosity is required when flow rates exceed 10 mL/min. 2 µm filter is for most analytical applications.

#### MATERIALS

- Teflon
- Titanium frit

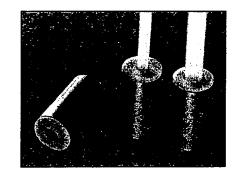
### SOLVENT RESERVOIR FILTERS

We took the convenient design you have come to expect from OPTI-SOLV™ and applied it to traditional solvent reservoir filters. These provide a simple connection with no tube restriction. Insert the tubing into the opening and drop the filter into the solvent reservoir. All filters are made of Hastelloy C® for maximum corrosion resistance and inertness. Each is available for 1/16", 1/8" or 3/16" OD tubing.

### Female Solvent Reservoir Filter

#### For I/16" OD Tubing

OPTI-Part #	Description	Price
10-04-00075	ss 25 x 22 microns as a constant of the second	
10-04-00076	22-micron/5/Pk#	
10-04-00077	J.10 micron	
10-04-00078	W. 2 10 micron: 5/Pk	



#### For 1/8" OD Tubing

10-04-00037 2 micron	<b>"这个是是一个是一个是一个是一个是一个是一个是一个是一个是一个是一个是一个是一个是一</b>
10-04-00039 2 micron, 5/Pk	
10-04-00040 10 micron	
10-04-00041 10 micron, 5/Pk	

#### For 3/16" OD Tubing (Waters Style)

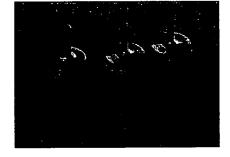
10-04-00042 <b>38</b> (8) <b>38 3 3 3 2</b> m)	CRON
2 mi	cron 35/P/2
10-04-000453 8 8 8 8 8 10 n	nicron es a la l
10-04-00046 (23%) 15-02-73-10,0	nicron;5/Pk

Optimize Solvent Reservoir Filters with tube stem are made of Hastelloy C for maximum corrosion resistance and inertness. The filter with a 1/8" stem is an improved version of the Waters filter, and is directly interchangeable. The filter with a 1/16" stem may be used for most other HPLC systems. For extended flow systems, and where flow rates exceed 10 mL/minute, a 10 micron filter is required. For most analytical applications, the 2 micron filter is preferable.

### Solvent Reservoir Filters with Tube Stem

#### For I/16" ID Tubing

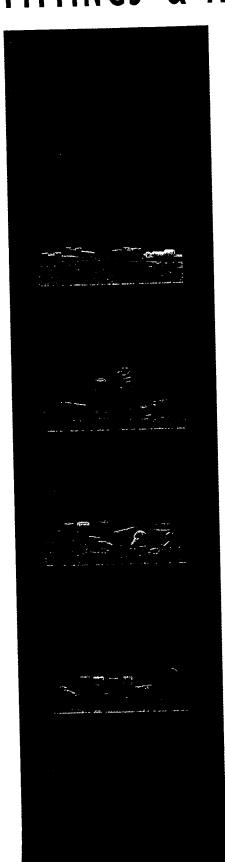
OPTI-Part #	Description	Price
10-04-0007	A 2 micron 4 a 2	
10-04-000723421	2 micron 5/Rk	
0-04-00073	The state of the control of the state of the	
0-04-00074	of the lomicron, 5/Pk	



#### For 1/8" ID Tubing (Waters Style)

10-04-00115	2 micron
10-04-00119	2 micron, 5/Pk
10-04-00111	10 micron
10-04-00114	10 micron, 5/Pk

### FITTINGS & ADAPTERS



Optimize manufactures a comprehensive selection of fittings, unions, adapters and plugs designed for maximum precision and longevity, and minimal dispersion. All of our fittings, from tees and crosses to the smallest double-tight ferrule, are precision-machined exclusively from inert materials. Machined fittings from Optimize are superior to fittings produced using mold-based techniques, as they offer greater concentricity, better consistency in wall thickness and thread profile, greater resistance to breaks, and surface finishes that are free of mold-lines.

Use Optimize fittings for critical connections between the components in your HPLC system, and discover the difference precision can make.

### OPTI-LOK™ Adjustable Adapters

OPTI-LOK Adjustable Adapters from Optimize enable you to make zero-dead-volume connections between any 1/4-28 or M6 male fitting and any 10-32 female port. Using a patented two-piece design, OPTI-LOK Adjustable Adapters automatically adjust to fit virtually any manufacturer's standard tube-stop depth (see page 17).

### OPTI-LOK™ Adapters

We also offer a useful selection of adapters for making connections between 1/4-28, M6 (Metric), Luer or 10-32 fittings. Use the charts on pages 18-19 to find the correct adapter for your application, or call our Technical Support Department if you do not see the adapter you require.

### High Pressure Fittings

We offer a complete line of precision-manufactured 10-32 and M6 fittings, unions, crosses and tees for making high-pressure connections. OPTI-LOK 6K fittings feature a separate nut and double-tight ferrule, for increased gripping power and secure sealing. For precision connections with integrated nut/ferrule fittings, choose OPTI-LOK I (see page 20).

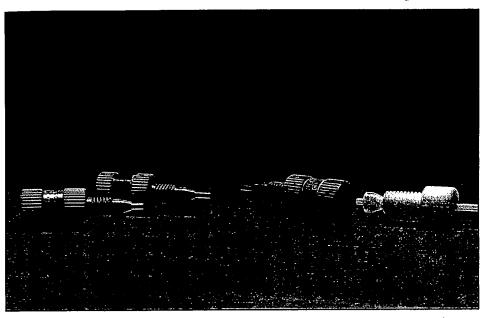
### Low Pressure Fittings

For reliable low-pressure connections, OPTI-LOK LP fittings are an excellent choice. With OPTI-LOK LP, you can connect 1/8" and 1/16" OD tubing into flat-bottomed 1/4-28 ports without the need for flanged tube-ends (see page 22).

### Custom Manufacturing

If you have a special need for a fitting or other connection accessory not listed in this catalog, let us know. Because we individually machine each fitting we sell, we can custom-manufacture small batches of components at a competitive price. For more information or a price quotation, call Technical Support at 800-669-9015.

### ADJUSTABLE ADAPTER



The OPTI-LOK™ Adjustable Adapter will connect any 1/4-28 male fitting to a 10-32 threaded female component. OPTI-LOK is also available for M6 male fitting to 10-32 threaded female port connections.

Our unique patented 2-piece design allows the adapter to adjust to virtually any manufacturer's tube stop depth. Simply hand-tighten to provide a perfect zero-dead-volume connection. This adapter is particularly well suited for connecting conventional HPLC columns to systems with polymeric tubing and flanged fittings, such as Pharmacia and Dionex. Reduce your adapter inventory with the OPTI-LOK Adjustable Adapter from Optimize.

### OPTI-LOK™ Adjustable Adapter OPTI-Part # Description

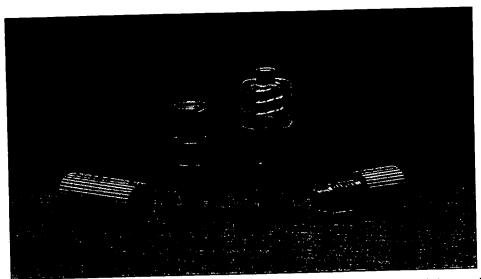
### PEEK knurled adapter body 0.010" ID for less than 2 $\mu L$ swept volume and minimal extra column effects Built-in ferrule seals to 6,000 psi 316 SS stem adjusts to all types of 10-32 internally threaded HPLC ports

U.S. PATENT NO. 5,525,303

### **FEATURES**

- Overall dimensions: 3/8" diameter x 1 1/4" long.
- 6,000 psi pressure rated.
- 0.010" diameter through-hole.
- < 2 µL internal flow-through volume.

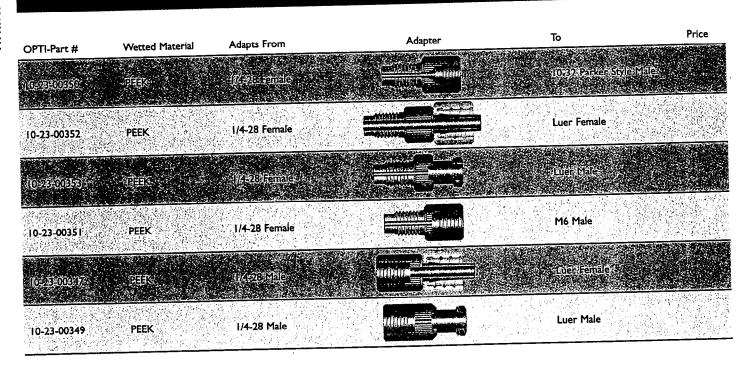
### **ADAPTERS**



OPTI-LOK™ Adapters offer maximum flexibility for making connections between your 1/4-28, M6 (metric), Luer and 10-32 fittings. They are available in a useful variety of thread-type combinations, all precision-machined from PEEK or stainless steel (SS). Only by individually machining each component can we produce the consistently precise and durable threads that you will find in every fitting, ferrule and adapter we offer.

If you can't find the adapter you need in this catalog, please call us. We often produce and stock other adapters that may not be listed here, and we can also custom-manufacture adapters for your particular application.

### OPTI-LOK™ Adapters

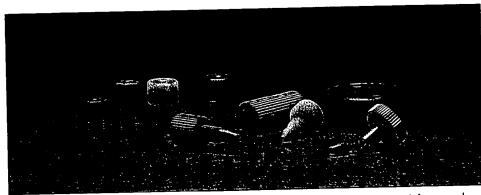


### **ADAPTERS**

### OPTI-LOK™ Adapters

OPTI-Part #	Wetted Material	Adapts From	Adapter	То	Price
10-23-00346	PEEK	1/4-28 Male		Me Male (with web)	
10-23-00335	PEEK	1/4-28 Male	ninina <b>-</b> enin	10-32 Parker Style Male	
10-23-00345		1/4-28 <u>Male</u>		10-32:Parker Style Male	
10-23-00357	PEEK	M6 Female		10-32 Parker Style Male	
10-23-00366	PEEK	M6 Female		An cue remaiere	
10-23-00355	PEEK	M6 Male	(111111 = 11111)	10-32 Parker Style Male	
10-23-00354	SS P	M6 Male	(PARRADA	ew 10:32 Parker Style Male	
10-23-00356	SS	M6 Male	(undanham	10-32 Waters Style Male	
10-23-00361	PEEK PERSON	M6 Male (1948)		ggager et duer Female et a	
10-23-00363	PEEK	M6 Male		Luer Male	
10-23-00358	PEEK	F0-32 Parker Style Male		a PrenMale	
10-23-00359	PEEK	10-32 Parker Style Male		Luer Female	
10-23-00364	PEEK 3 % ( 3 %)	10-32 Parkër Style Male		Mark Cone	
10-23-00365	SS	10-32 Parker Style Male	sprat	I/4-28 Male Cone	

### FITTINGS



OPTI-LOK™ 6K fittings are ideal for connecting 1/16" OD tubing to any stainless steel or polymeric 10-32 threaded port. For biocompatible applications, use OPTI-LOK 6K PEEK fittings and OPTI-PEEK™ tubing for completely inert high-pressure connections.

OPTI-LOK 10-32 couplers allow convenient connections between female 10-32 ports. These couplers consist of two OPTI-LOK I fittings and a 6 cm stainless steel tube (.006" ID) Internal volume is only 1.4 µL, making OPTI-LOK couplers ideal for connections between filters, guard columns and analytical columns.

OPTI-LOK unions are well-suited for connecting 10-32 threaded fittings with stainless steel or polymeric tubing. Tees and crosses from Optimize are precision-machined from PEEK, and are available in two different through-hole sizes. OPTI-LOK plugs in PEEK or Acetal offer a lowprofile design and will firmly seal 10-32 threaded female ports.

### High Pressure Fittings & Plugs for 1/16" Tubing

OPTI-LOK™ I 10-32 Hand-Tight Fittings with Integral Ferrule



### OPTI-LOK™ 6K 10-32 Nuts & Ferrules

OPTI-Part #	Description	Price
Tel A 201469	Ang Rander Herry Has	<del></del>
100-200-0074AC	ing Regulate Steak (Plate of Sandle of Gladon Steak	i in the same
0-20-00271	Nat Hex Head Short PEEK	
6-20-00272 ×	Nut. Hex Head, Short, REEK (v/) Formule/(10-20-007(9)): 10/RIS	
GEOMETE	सिंग्ड मिंग्डलेस्टर २००३, वर्षेत्र	eren ves
al Stage Harry Edge	。 · 如应性的是由此一种是中国人。自由中国人员的大部市。中国	
210-20-00277	Nut White Acetal, Knurled	
310-20-00278 X	Nuc White Acetal, W/ PEEK Ferrule: (10-20-00269): 10/PR	
		4
7.0°-30400 <b>33</b> 48	June Courte - Frence St.  Nice Antiffed Frence St. (2019 File Antife generally in Section, 1970)	
	为此一种。如此是60年165日,20人以上4月27日的自由的1970年的1970年的	a de la compania del compania de la compania del compania de la compania del la compania de la compania del la compania de la compania de la compania del la compan

10-20-00269 6K Double Tight Ferrule, PEEK











## FITTINGS & ADAPTERS

### **FITTINGS**

### 10-32 Couplers with 1/16" OD x .006" ID x 6 cm SS Tubing

OPTI-Part #	Description	Price	
1 0F5X6F15[0] "3-	Carper Spri		
10.20.0023	Wenther 254		
10-20-00200	onishing Couples, Curry Carry		(11 max) (11 m)

### Universal 10-32 Nuts & Ferrules For 1/16" OD Tubing

OPTI-Part #	Description	Price	
604 0655	चीताराम्बन्सा हेरानाः हैं		And the second second
10-12,10,000	্রায়াস্থান্তর প্রাক্তি 🕉 🐼 🖼	જ્યાલ મહા જ વાંગાલકો નહીં સું	
10-924-00369	Ferrie SS		
The particular	महस्राधान्य समितः		

### 10-32 Unions For 1/16" OD Tubing

OPTI-Part #	Description		Price	
10-20-0026 ( 6 %	Union PEEK 9010 Sund			West Control of the C
10-20-00262	A NUnion PEEK 0.020 Sthrit			
10-20-00267	Union (PEEK-0.050), third			
16,2201,775	11 Jan 25, 37 5 20 341 4	an armining the first of the same and the sa		~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~
F10-241-01013V 11	12. (m. 1. 2. 2. 2. 2. 2. 2. 2. 2. 2. 2. 2. 2. 2.			Publication and the second
TOE DAY SOUTH	States Ste Medie, Alle			

### 10-32 Tees & Crosses For I/16" OD Tubing

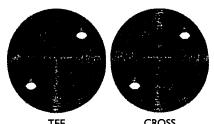
-[0-20-002874)	PEEK D.020. United the second	4
10-20-00288 1 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2	REEK OXOSOX thru	

### TEE

### 10-32 OPTI-LOK™ Plugs

OPTI-Part #	Description	Price
10-20-0025 P. S.	A # 7. Plug White Acetal Co. Salva Mas. 2004	
10-20-00253	Save so Plug White Acetal-10/Place and acetal-10/Place	
NC-194062 2	'सात् <sub>र</sub> सेक्षतं ''पत्रस्था	
\$10F40H31872.71	Pig Best (Ca) (97%)	
10-20-00255 大学学教	Same Signification of PEEK And Signification of the Peek And Signi	ar a service de la companya de la c
10-20-00256	Plug Natural PEEK 10/Pk	

High Pressure Fittings for EDC, Parker, SSI, Valco, & Waters can be found on pages 24-25







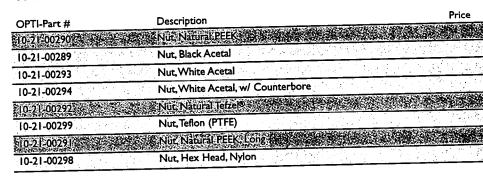
# **FITTINGS**



OPTI-LOK™ LP Fittings are an excellent choice for making low-pressure connections into 1/4-28 ports. Connections to flat-bottomed ports can be made using OPTI-LOK flat-bottomed ferrules for 1/16" or 1/8" tubing, without the need for pre-flanged tubing ends. OPTI-LOK LP fittings are precision-machined to deliver leak-free, zero-dead-volume connections every time.

#### Low Pressure Flat-Bottomed Fittings & Plugs

#### OPTI-LOK™ LP 1/4-28 Nuts & Ferrules For 1/16" OD Tubing



			Control of the Contro
010 21 00296 to 40 % bank \$4.5	Ferrule, Natural PEEK		
TO A CONTRACT OF THE PARTY OF T	Ferrule Black PEEK		
10-21-003024	A STATE OF THE STA		NAME OF THE PROPERTY OF THE PARTY OF THE PAR
10-21-00295	Ferrule, Natural Tefzel		
10-21-00300/	Ferrule, Teflon (PTFE)		
10-04-00107	Ferrule, Filter Assembly,	PEEK, 2 µm SS Frit	

#### OPTI-LOK™ LP 1/4-28 Nuts & Ferrules For .100" OD Tubing

OPTI-Part #	Description	Price
*10-21-00283 🚉 💝 🛫	Nut.Acetal	
10-21-00284	Nut, PEEK	
10-21-00285	Nuc. PEEK, Long	
Zus inches eine eine eine eine eine eine		
10-21-00281	Ferrule, Natural Tefzel	















# FITTINGS & ADAPTERS

# **FITTINGS**

#### OPTI-LOK™ LP 1/4-28 Nuts & Ferrules For 1/8" OD Tubing

OPTI-Part #	Description	Price
[0-2]-00307;	Nocionalizer	
10-21-00305	Nut, Black Acetal	Search State of the Search
10-21-00310	Nut, White Acetal	
10-21-00311	Nut, White Acetal with Counterbore	
10-21-00306	Mar Not Kellen and Santa Ballen	
10-21-00309	Nut, Natural Tefzel	
10-21-00317	Nuesciloty(PISE)	
10-21-00308	Nut, Natural PEEK, Long	
10-21-00316 %	A STANDARD CONTRACTOR OF THE STANDARD CONTRACTOR	
10-21-00313	Ferrule, Natural PEEK	
(0-21-003)/2	a established september and the september of the septembe	

Ferrule, Teflon (PTFE)













OPTI-Part #	Description	Price
10-21-00322	Union, Square, Polypropylene	
10-21-0032310	Uniton Knuried PEEK	
10-21-00327	Union, Hex, Natural Nylon, Long	



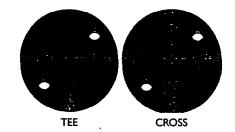
#### 1/4-28 PEEK Unions, Knurled With Wrench Flats

OPTI-Part #	Description	Price
10-21-00341	Union/REEK (0)(07 this/, yel)	
10-21-00342	Vijoji PEEK AVOrdaan Webs	
10-21-00344	Unio, PEEK AND HEAD AND	
J0-21-00336	Continue State Continue Activities	
10-21-00343	CEX 2 Sens VEQ. SEER (COM.)	



#### 1/4-28 Tees & Crosses

OPTI-Part #	Description	Price
10-21-00279	TEE, .020" thru, PEEK	
10-21-00280	TEE, .050" thru, PEEK	
10-21-00286	TEE, .062" thru, PEEK	When set on the service



#### OPTI-LOK™ LP 1/4-28 Plugs

OPTI-Part #	Description	Price
10-21-01292	Plug, White Acetal	· 自由于特别的政策
10-21-00326	Plug Teflon (PTFE)	NO CONTRACTOR OF THE



# **FITTINGS**

Optimize manufactures OPTI-LOK $^{\infty}$  M6 fittings for metric applications. We also offer LDC style and SSI style fittings for the special connection requirements of LDC and SSI HPLC systems.

#### OPTI-LOK™ M6 Metric, LDC & SSI Style Fittings

#### OPTI-LOK M6 Metric Union

		OPTI-LOK M6 Metric Union	
Name of the Party of		OPTI-Part # Description	Price
		OPTI-LOK M6 Metric Nuts & Ferrules for 1/16'	'OD Tubing
		OPTI-LOK 6K PEEK Metric Fittings for 1/16" OD Tubing	
		OPTI-Part # Description	Price
		(0522-0032)8   Nita PEEK Shuneday/Files	70000000000000000000000000000000000000
		Notable stight behavior of the	2007-04-04-04-04-04-04-04-04-04-04-04-04-04-
		OPTI-LOK LP Metric Fittings for 1/16" OD Tubing	TENUS DE GEORGE
4004/459 <b>4</b>		1090x00280 NoteWhiteVaget	Control of the Contro
		To To took Permine, ukriger, Telega, Their Termine, Net	العالمة والقطاف والإنسان أن المعدد المعين ألمان الدارية. المعادد المعدد الم
	•	OPTI-LOK LP Metric Fittings for 1/8" OD Tubing	
		105-7-2007(z) NincWhite/AGE	
	ATT.	(0122/2002) NuraBlad GACGETIA	
		S. Mayor 2	ere en lieu group d'anne en
		OPTIMIZE Universal Metric Fittings for 1/16" Tubing	
			3.00
		10-X-2013 (10-X-201) (10-X-2014) (10-X-2014) (10-X-2014)	PSY-IOIRI
		10-2490369 February	
11111		LDC Style 5/16-24 Fittings	
		OPTI-Part # Description	Price
	_	के अपने किया है है। इस के बार के बार के किया के	
		SV-57 =007476: Nitro-Ferrule for alfalle Discharge sub-	
		SSI Style 1/4-28 Fittings for 1/16" OD Tubin	
		OPTI-Part # Description	Price

OPTI-Part #	Description	Price
So Neggier (	NO. IS	
\$45.28±309.54%	লেছি জী, কৰিবল ক্ষি (বেইছিৰ) ক	of other
36-24-01674 💸 🔭	Ferrule SS 💝 🐪 💥 📆	
18 7660 1880 - 25	Farme 1917	
10-20-00330	# PK / Nut 1/4-28 6K PEEK   大き	
Actorial de la company	「我的意思者的是如此問題」。 「我的意思者的意思」	ল এই েজনু, <u>এক</u>
101-210-1010-2010 V	Domain ingo demonstration	
Barrier Markette and Control of the Control		•

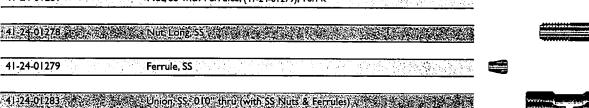
# **FITTINGS**

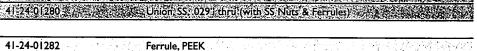
Optimize Technologies offers genuine Valco fittings, as well as Waters and Parker style nuts and ferrules for most 1/16" OD tubing. All fittings are precision machined from type 316 SS. These Waters style and Parker style fittings are manufactured by Optimize Technologies.

#### Stainless Steel & PEEK Fittings

#### Parker Style 10-32 Fittings for 1/16" OD Tubing

OPTI-Part #	Description	Price
40-24-01275	si sugt (Nut-SS )	
40-24-01276	Nut. SS with Ferrules (40:24-0(29)): [0/Pl	
40-24-01291	Ferrule, SS	
40-24-01290	Ferrule, PEEK	
		•
40-24-01271 🛊 🚜 🔉	2 20 Union SS: 010" thru (with SS Nuts & Fe	rrules)
40-24-0 273	Cr. Union SS, 020" thru (with SS Nuts & Fe	rrules)
Ganuina Valca	10-32 Fittings for 1/16" OD Tul	hina
denume vaico	10-32 Fittings for 1710 OD ful	ning
OPTI-Part #	Description	Price
11-24-01277	Nut, SS	
11-24-01281	Nut, SS with Ferrules, (41-24-01279), 10/Pk	Parameter Control of the Control of







#### Waters Style 10-32 Fittings for 1/16" OD Tubing

OPTI-Part #	Description		OEM#	Price
39-24-01090 🛬 🖰	Compression Screw SS:		≈ 05070 ·	
39-24-01091	Signal Screw with Ferrules: (39-)	24-0(291); 10/Pk (4+0)	25604	
39-24-01291	Ferrule, SS		05063	j je kara
39-24-01290	Ferrule, PEEK		21817	





#### Teflon® (PTFE) Precut Tubing

This LC-grade Teflon tubing from Optimize is made using only premium grade virgin PTFE, with less than 0.01% liquid absorption.



#### 1/16" Outside Diameter Teflon Tubing

OPTI-Part #	Description	Price
\$\tilde{\infty} \cdot \tag{\tag{\tag{\tag{\tag{\tag{\tag{	The first of actions	le e Billion potazione. Le e grafia un tratano distri
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- Aug 4092	(1) 10 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	الموادية ال الموادية الموادية ا
13: 32: 2	できたのできます。	

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0.15-00221	020 (ID		Natural .	1	
10-15-00218	02031D			*	
10-15-00219	020° ID	× 50 ft	Black		



SIOSISEOOEE7 OCIONIES SIOGESPaurale	Ž,
10 3 5 000 2 7 0 0 30 3 10 3 2 50 ft Natural 8 5 5	
10215-20230 040-4[D x 10 to Black	1
10-15-0023	ê

#### .100" Outside Diameter Teflon Tubing



#### 1/8" Outside Diameter Teflon Tubing

210-15-00738 48-48	8 062 D.X O.ft Natural Sec. 2019 See 18 18 28
10-15-00240	2062 (ID-X 50-ft Natural 38 X )
10-15-00236	c# 062, ID x 10 ft Black 3.8 3.0 €
¥10-15-00237	2-062; ID X 50 h Black

#### 3/16" Outside Diameter Teflon Tubing

1 Get 3.43(224)	1.125	<b>注(][]</b>	

#### Tefzel® (ETFE) Precut Tubing

Solvent resistance, high-pressure performance and handling ease make Tefzel a good replacement for SS or Teflon tubing. For a completely inert flow path, connect your tubing with OPTI-LOK™ 1/4-28 or 10-32 fittings in Tefzel or PEEK.



#### 1/16" Outside Diameter Tefzel Tubing

OPTI-Part #	Description	Price
4-510 °4	1 A M F 20 3 F 2 2	n in 1975 hije <u>n na dipila nakaba</u> n na na <del>na pada d</del> ar
ित्र क्षेत्रिक्षिति । इस्य <u>इत्य</u>	10 mg 2- 25 fg to	
60=14=00196	90 DX106	
10-14-00 897	070F1D1x45046	
1. 16. 16. 16. 16. 16. 16. 16. 16. 16. 1	12 14 14 14 14 14 14 14 14 14 14 14 14 14	

#### 1/8" Outside Diameter Tefzel Tubing

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MINISTRUCTURE CONTRACTOR CONTRACT	One call Constitution

#### BURST PRESSURE TABLE Outside Diameter Inside Diameter Burst Pressure\* TEFLON TUBING ,000 psi 800 psi 100" .040 800 psi 062" 1/8" 600 psi 3/16" .125" TEFZEL TUBING 4,000 psi 3,000 psi 020' 2,000 psi .030" 1/16" 1,000 psi .062" 1/8" PEEK TUBING 2,000 psi 8,000 psi 020" 5,000 psi .030 1/16 3,000 psi .040" 1/16" 2,000 psi .062"

\*NOTE: This table is supplied only as a guide to assist you in determining the correct tubing type and size. Rather than being based on continuous use, the burst pressures listed were determined as a result of our testing to find the absolute burst pressure limit. Your routine operating pressure for any tubing should include a margin of safety based on your application.

# **TUBING**

#### OPTI-PEEK™ Precut Tubing

OPTI-PEEK tubing offers better solvent compatibility and high pressure performance than other brands of PEEK tubing. For lon-chromatography and biocompatible applications, OPTI-PEEK is an excellent choice. For optimal performance, use OPTI-LOK 6K PEEK fittings and double-tight ferrules.



#### 1/16" Outside Diameter PEEK Tubing

OPTI-Part #	Description	Price
Margani (di	्रांगई? पति इत है तो	
[(6] 23 3.64 TE	. 106° 12° x 36° ft	
10-13-00175	* 20 00 07 ID X 10 ft 2 3 07 5 5 3	
10-13-00177	######################################	
(10)±(3)+0(0,€)±	AND TOOL OF	
16 3400 344	(94° 12 % 16° ±	
10-13-00187	A STATE OF THE CORNER OF THE C	ariyesa tariri
10-13-001914	030 ID x 50 ft 4	
162 12 - 26 17 C	- 340° 1931 8 15 16	
ICHE ADVAN	OCT OF A TO	

#### 1/8" Outside Diameter PEEK Tubing

10-13-0017 1-4 \$ \$ 662-10 x 10	
10-13-00174) (10 × 50	hy by our fair parties the season of the

#### **Tubing Cutters**

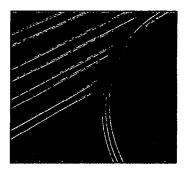
These unique tubing cutters give you a clean, straight cut every time. The plastic tubing cutter features a slotted housing which holds all sizes of our plastic tubing perpendicular to the blade.

The Optimize stainless steel tubing cutter offers a quick, efficient method to cut tubing without collapsing it. This tool works extremely well on narrow bore tubing in which the ID is .006" to .020".

OPTI-Part #	Description	Price
10-10-00139	Plastic Tubing Cutter	
10-10-00140	Stainless Steel Tubing Cutter	

#### Stainless Steel Precut Tubing

Optimize offers LC-grade 316 SS tubing, straightened and square-cut for solid, burr-free connections. SS tubing from Optimize is passivated, water washed and flushed with HPLC grade methanol prior to shipment. Tubing is also available for bulk-purchase in longer lengths.

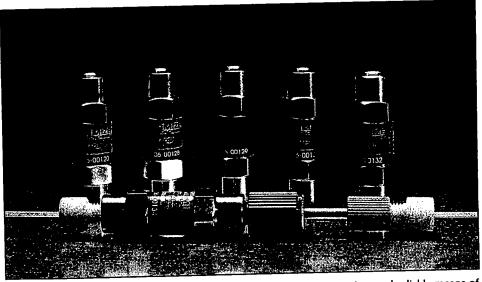


#### 1/16" Outside Diameter Stainless Steel Tubing

OPTI-Part #	Description	Price
(\$1)24(\$0),446	्राह्मित्र ए का इंचिक्ते	
15 m 240131 63		
1.5-15.00144	0.000 D 3- 75 H-1	
100 2-15010	600 19.2 FF	
10-12-00151	0 0 iD x 6 cm / 2	
10-12-00[485	010° ID x 10 cm	s are said from the least of the
10-12-001493	(4.010'*,ID x 20 cm * - ; )。。	
10-12-00150	010" ID x 30 cm	
10-12-00146	010; ID x 10 ft	10.792-197.1863
19,62,00 47	· 这些 (1)	
1549AIOFA	THE SEASONS.	
102,24,000.0	MAP Do Mari	
10,100,001,71	229° C. 12 an	بالمناف المعاد بيان المان
1642年167年	Law Driet	
10-12-00162	29.030' ID x 6 cm.	A STATE OF THE STA
10-12-00160	030" ID x 10.cm	
10-12-00161	%, %,030" ID x 20 cm	
10-12-00158	030° ID X 10 ft	
एक इन्हें। इन्हें	MO Parker 2	
地區 高號 "數"	in the contract	
(1) 10 1 1 (C)	10.00 (C > 20.00 )	
William B		Barrier Carrier



# BACK PRESSURE REGULATORS



Flow-through back pressure regulators from Optimize provide a convenient and reliable means of introducing controlled amounts of back pressure in your HPLC flow path. Optimize back pressure regulators are more than just flow restrictors; they are designed to maintain constant back pressure regardless of mobile phase viscosity or flow rate. Use them downstream from your detector to prevent solvent outgassing and bubble formation in the detector cell.

Optimize offers adjustable back pressure regulators designed to provide back pressures in the 0-150 psi range. Adjustment is made via a positive locking mechanism, allowing you to select the back pressure you need, and be sure that pressure will be maintained. These regulators have an internal volume of 100  $\mu$ L, and are supplied with OPTI-LOK LP fittings, complete instructions and an adjustment tool. They are available in pre-set pressures of 10, 30, 60, 100 or 150 psi. For regulators preset at pressures not listed, please contact Customer Service.

#### Adjustable Back Pressure Regulator

OPTI-Part #	Description	Price
Margin 125	( ) pr	
1000000	\$ 100 m	
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10 (10) (10) (20)	AND 1801	je nje modeli stale je anim svjetskih mitili na
0.000.001.58	The second secon	and a standard of the same of the same

For ultimate convenience in adjustable back pressure regulation, our External Adjustment Regulator is an optimal choice. Any back pressure from 0 to 100 psi can be dialed in simply by turning the external adjustment knob. This regulator is ideal for use in stream splitting applications, and wherever easily accessible fine-tuning of back pressure is a necessity. The External Adjustment Regulator has an internal volume of 100  $\mu$ L, and is supplied with OPTI-LOK LP fittings and Tefzel® connecting tubing.

#### External Adjustment Regulator

OPTI-Part #	Description	Price
₫10-06-00134	External Adjustme	int Regulator

# Equation (Allertages) and the second of the

# OPTI-FLOW™

Your chromatographic results depend on the capability of your HPLC system to deliver accurate flow rates. On most HPLC systems, however, there is no simple way to directly measure the flow rate being delivered; only indirect information such as back-pressure readings are readily available. With the OPTI-FLOW Digital Flowmeter for HPLC, accurate measurement of flow rate becomes a routine procedure. With OPTI-FLOW, you can perform standard ISO, GMP and GLP pump calibration requirements, as well as monitor post-detector flow volume, without interrupting the HPLC run in progress.

#### OPTI-FLOW\*\* Flowmeter

OPTI-Part #	Description	Price
	Constitution of Supplemental and prophers.	
10-40-01677	WORTEFEOW/Package Digital/Liquid Flowmeter & Software (with New Adapter)	
TEXO E NO.	ि जिल्लासिक अर्था जिल्लाहर अर्थाति सिंद्या सम्बद्धाः स्थान अर्थानस्य साम् अर्थाः स्थानस्य सम्बद्धाः ।	
10-40-01905	AO AT A ROWAR Care: Digital Equir Howmerer & Solevato	
	GE Marked with 220 VAdapter Fall and Fall and July 1997 1997 1997	

#### **FEATURES**

#### SPECIFICATIONS

#### SOFTWARE OPTION

- True Volumetric-based results.
- NIST-traceable. (certificate provided)
- On-line monitoring facilitates troubleshooting of the flow rate without interruption of the run.
- Automatic flow rate update.
- Flow range: 0.100 to 30.0 mL/min
- Inert wetted surfaces: glass, PTFE and stainless steel.
- Microsoft Windows<sup>™</sup> 3.0 or DOS software available.

- Accuracy: +/- 1%
- Repeatability: 0.5%
- 70 μL sample volume
- 110 or 220 volts
- To fully automate the acquisition and archiving of flow rate data, Optimize offers a software package for DOS and Windows\*, which includes:
- Software
- RS232 module
- · 10' serial cable
- · 3' flowmeter cable
- Minimum Requirements: 286 PC and Windows 3.0 or higher.

Guard Columns:

Selecting Optimal

Precolumn

Protection

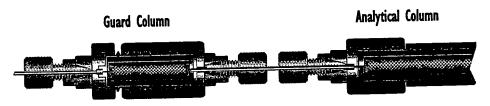
For Your HPLC

Liquid chromatography has become an increasingly sophisticated separatory technique over the last two decades, as advances in instrument technology have led the way to lower detection limits, increased automation and more powerful data-handling capabilities. In similar fashion, improvements in packing material and column design have led to more efficient, selective and reproducible separations. Even with these substantial design improvements, however, the analytical column continues to be a problematic link in the HPLC component chain. With the cost of quality analytical columns continually increasing, and with the price of some specialty analytical columns reaching into the thousands of dollars, effective precolumn protection is a wise precaution in today's cost-conscious HPLC laboratory.

#### Choosing A Guard: Factors to Consider

When it comes to choosing a guard column, there are several factors that are important to consider. The fundamental role of a guard column is to trap particulates, chemical contaminants and other foreign material in order to prevent them from fouling the analytical column. A guard column containing the same type of packing material as the analytical column will usually provide the best protection. Chemical contaminants and other substances with a propensity for fouling octadecyl stationary phases would be best trapped by an octadecyl guard column; contaminants that cause deterioration of a particular packing material would first attack the stationary phase in the sacrificial guard, protecting the analytical column for as long as the capacity of the guard column will allow.

A second factor to consider is a guard column's potential for contributing dispersion through introduction of extra-column volume. The installation of a guard column requires that additional connections, and often extra tubing, be incorporated in a section of the chromatograph where excessive dead volume can literally make or break an assay. A well-designed guard column will minimize the amount of extra tubing required for connection to the analytical column, thus minimizing extra-column dispersion.

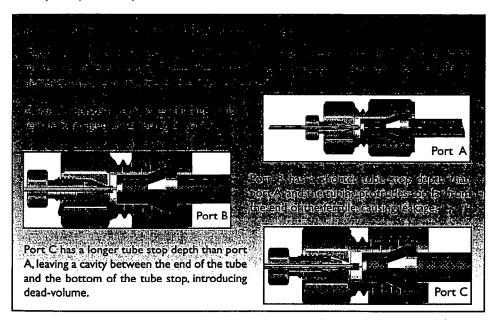


Some guard columns can contribute to extra-column dispersion, as they must be connected using additional tubing and fittings.

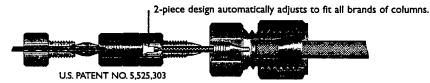
When selecting optimal precolumn protection for your HPLC, you should also consider potential ways in which the guard column will affect separation efficiency. To use a guard column is to extend the length of the packing bed by a finite distance. A well-designed guard column will impart minimal influence on the efficiency of the analytical separation. A guard column that affects efficiency to any great degree will cause problems when validation time arrives, or when the guard itself must be replaced. Pellicular packing materials of larger particle size (40  $\mu$ m) can provide effective precolumn protection without significantly influencing the characteristics of the separation, but internal column dimensions must be minimized and tightly controlled to prevent losses in efficiency. Microparticulate stationary phases with particles of 3-5  $\mu$ m provide greater capacity, but can have a potentially larger effect on separation efficiency.

#### Optimal Protection By Design

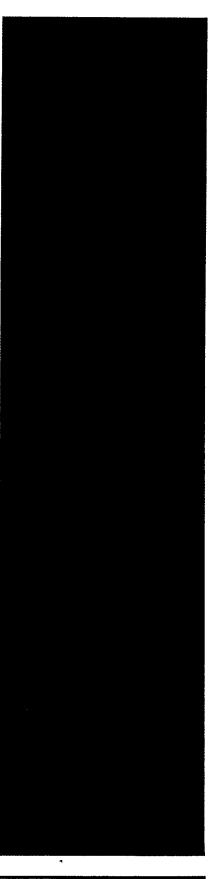
If a prospective guard column is to provide optimal performance and protection for your analytical column, it must address the physical and chemical constraints previously mentioned. OPTI-GUARD™ Imm and 3mm Guard Columns from Optimize have been designed to offer reliable low-dispersion column protection, while eliminating any chance of dead-volume introduction in the precolumn region. OPTI-GUARD offers tool-free connection with an automatically adjusting tube stem for perfect zero-dead-volume connections, regardless of the analytical column manufacturer's tube stop depth. This patented design guarantees that the tube stem of any OPTI-GUARD will automatically bottom out securely against the tube stop of virtually any 10-32 female port. Some guard columns incorporate molded one-piece couplers or swaged-on ferrules that establish a fixed tube-stop depth for connection to the analytical column. Guards with fixed tube stems will invariably introduce either dead-volume or leaks at the connection with the analytical column when they are switched from one port to another. This situation can occur even when a fixed-stem guard column is switched between different 10-32 ports from the same manufacturer. Because tube stop depth will vary from port to port due to normal manufacturing tolerances, a guard column that utilizes a fixed tube stem will often leak or introduce dead volume when it is switched between different female 10-32 ports (see below).



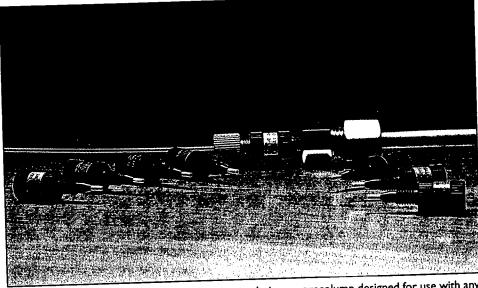
Ideally, a guard column should perform its primary function of column protection in a manner that is as chemically transparent as possible to the chromatographic separation. When selecting a guard column, choose high quality packing materials that are a good match for the stationary phase of your analytical column. Also, be sure that the guard column you select is designed to minimize extra-column effects. Guards that avoid fixed or pre-swaged tube stems, and connect directly to the analytical column without the need for extra tubing, are the optimal choice.



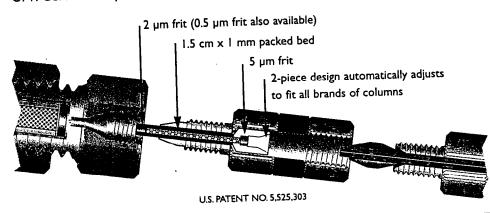
OPTI-GUARD columns use an adjustable tube stem design for zero-dead-volume connections every time.



# OPTI-GUARD™ Imm



The OPTI-GUARD™ Imm Guard Column is a revolutionary precolumn designed for use with any HPLC column. The unique patented design of the OPTI-GUARD Imm provides a perfect zero-dead-volume connection every time, without the need for a special holder. This versatile design makes the OPTI-GUARD Imm an excellent choice for protecting all of your analytical, mini and microbore columns. When selecting a guard column, however, it is important to consider what it won't do, as well as what it will do. The OPTI-GUARD will not affect the efficiency of your chromatographic separation; your resulting chromatograms will remain virtually identical to those obtained without a precolumn. For maximum versatility and minimal extra-column effect, make OPTI-GUARD Imm your first choice in precolumn protection.



#### OPTI-GUARD™ Imm Guard Column

OPTI Prom #	Packing Description	Color	Qty.	Price
OPTI-Part #	Tacking December 1	-अंबंब.	1.74 (1.50) \$1 -000 £	
Month of				
10-02-00010		The National Control		
40200000000	Stre	ાં જાઈ છે.		
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A CONTRACTOR OF THE PROPERTY OF THE PARTY OF		Red W	** TF#544	
10-02-00026	Natural Park	Shac		
all the controls	ANTON BEAUTIE			an charge
ត្តi 0-02-00034 + 🕸	Agua Cation Exchanger 編 編 日	A CANADA AND A CAN	ALTERNATION OF THE PARTY OF THE	P. D. P. S.

#### **FEATURES**

- No holder needed.
- Depth filtration design.
- Color coded.
- Completely disposable.
- Compatible with any 10-32 column unique, packed tube stem automatically adjusts to fit all brands of columns, assuring perfect zero-dead-volume connections.
- Simple hand-tight connection.
- Several OPTI-GUARD Guard Columns can be connected in series to combine chemistries or give added length.
- No bigger than most hand tight fittings attaches directly to the column, fitting into most column heaters.

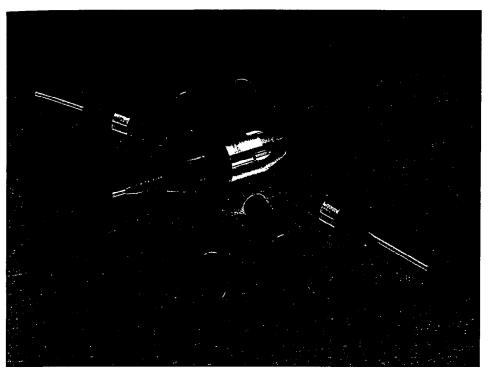
#### SPECIFICATIONS

- Overall dimensions: 3/8" diameter x I" long.
- 1.5 cm x 1 mm packed bed.
- 6,000 psi pressure rated.
- Depth Filtration Design.
- Available in reverse and normal phase chemistries.

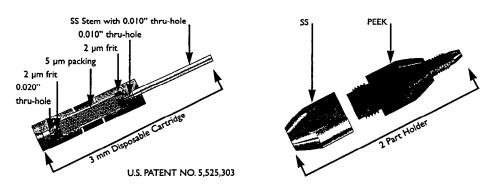
#### MATERIALS

- Techtron® PPS (Polyphenylene Sulfide)
- 316 Stainless Steel
- PEEK

# OPTI-GUARD™ 3mm



The new OPTI-GUARD™ 3mm Guard Column is a revolutionary precolumn designed for use with any HPLC analytical column. The patented design of the OPTI-GUARD 3mm incorporates many of the features of the OPTI-GUARD 1mm Guard Columns, including tool-free zero-dead-volume connection and an automatically adjusting tube stem. This new addition to the OPTI-GUARD family continues a tradition of reliable performance with minimal influence on your chromatography. The OPTI-GUARD 3mm Guard Column is designed to provide optimal protection for your analytical column. For increased capacity and minimal extra-column effect, choose the OPTI-GUARD 3mm Guard Column.



#### OPTI-GUARD™ 3mm Guard Column

OPTI-Part #	Packing Description	Qty.	Price
10-102-14 (152)	દે હૈયાદેવાલું		
10-02-01485	Ca Cantridge 10 to		
10.00.00	ক, ইনালুগার-		4
10-02-01722	C <sub>I</sub> Cartridge 4 (1983)		
10405-67.478;	NI-M Carbings		7
10-02-01491	r Silica Cartridge		
Meyer (192	जीव्यव्या ।		<u> </u>

#### **FEATURES**

- · Replaceable/disposable cartridge.
- · Six bonded phases.
- Compatible with any 10-32 column tube stem automatically adjusts to fit all brands of columns, assuring perfect zerodead-volume connections.
- Simple hand-tight connection.
- Attaches directly to the column, requiring no additional tubing or fittings.
- · Application versatility & loadability.
- Chemical stability.
- Mechanical stability.

#### SPECIFICATIONS

- 1.5 cm x 3 mm packed bed.
- 6,000 psi pressure rated.
- Packing:
  Kromasil™ 100Å a spherical, totally porous, silica-based chromatography material, developed and manufactured to meet the exacting standards of modern liquid chromatography. Developed for both analytical and preparative HPLC.

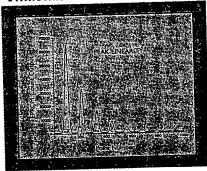
#### MATERIALS

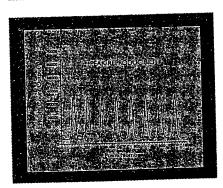
- 316 Stainless Steel
- PEEK

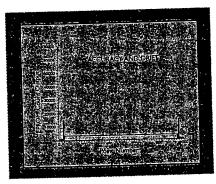
といれていたとうなってからして、これの問題を高さるなるを変えるとのは、そのなかにあるるをはなるというとう

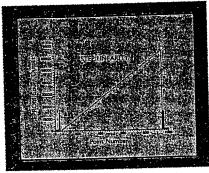
ALIDATION

#### STANDARD OUTPUT WAVEFORMS

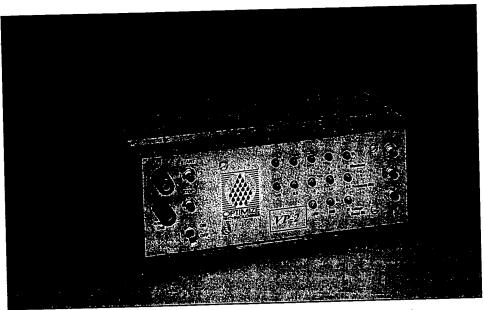








Waveforms may be generated at different speeds to simulate a variety of chromatographic peaks.



Bring the power of reliable and certifiable analog-to-digital (A/D) interface validation to your laboratory with the VP-2 A/D Interface Verification System from Optimize. The VP-2 is designed to verify the linearity, reproducibility and accuracy of your A/D interface. It generates NIST-traceable predefined waveforms that can be read by your data acquisition system, and measures the performance of your interface via software-based comparisons of collected data to original waveforms generated by the VP-2.

#### A/D Interface Validation For Your Lab

Everything from acquisition and analysis of the chromatographic data to control of instrument parameters can now be handled by dedicated workstations and LIMS systems. Computer-based data acquisition requires that chromatograms be transferred to the digital domain via analog-to-digital interface prior to storage and subsequent processing. If the primary goal of a thorough validation procedure is to verify the linearity, reproducibility and accuracy of the HPLC system as a whole, this validation procedure should take into account the performance of the data-acquisition system, and more specifically that of the A/D interface. Most regulatory entities already require that routine validation procedures be extended to cover the software and hardware of HPLC data-acquisition systems. The VP-2 A/D Verification System enables you to perform NIST-traceable validation of your data acquisition system, giving you the power to meet these validation requirements in your laboratory.

The VP-2 works by generating predefined waveform voltages (referred to as "KEY" waveforms) that can be read by the A/D interface under study. Interfaces are validated by comparing the waveform as collected by the data acquisition device (referred to as the "TEST" waveform) to the KEY waveform. Waveforms are stored on a Zero-Insertion Force (ZIF) EPROM. This easily changed chip allows access to alternate waveforms simply by switching EPROMs. Predefined digital waveforms are converted to analog waveform voltages by a high resolution 22-bit digital to analog converter, and can be output at variable speeds, allowing simulation of a wide variety of chromatographic peaks (see charts at left).

#### Chromatographic Software Validation EPROM & Custom EPROMs

Chromatographic software validation can be performed using an optional HPLC Software EPROM. Single level, multi-level and internal standard usage can be simulated and output to the A/D interface under study. These waveforms allow for testing of software algorithms, such as those defining start and stop points for peaks, or governing the separation and quantification of several fused peaks. If you wish to test a particular software feature for which a suitable waveform is not available, a custom-programmed EPROM containing appropriate waveforms can be purchased. Please contact Optimize for more information about the availability of custom EPROMs for the VP-2.

#### Potentiometer-Free Calibration, NIST Traceability

All VP-2 hardware calibrations are performed using the included software. There are no analog potentiometers used in calibration, as these are mechanical devices, and are hence subject to drift with time. The absence of potentiometers ensures optimal performance and reliability between calibrations. The accuracy of waveform voltages output by the VP-2 is directly traceable to the National Institute of Standards and Technology. During initial calibration and subsequent recalibration, the accuracy of the VP-2 is certified by a NIST-traceable voltmeter. Each of the VP-2 waveforms are output to this voltmeter at each of the possible voltage ranges. Any deviations from ideal observed during calibration are stored in the VP-2 software, which can then display the traceable voltage output calibrated to the specific VP-2 waveform generator. Thus, each VP-2 will have its own unique calibration file, individually matched by serial number to the instrument itself. A certificate of calibration is provided with each new unit, and with each annual recertification.

#### VP-2 A/D Verification System

OPTI-Part #	Description	Price
40/25/0746	WES WITH ENGINE WEBDIES DOWN TROP	
30≥6:017474-1914.2	ाः <u>धिन्नानार्वत्यस्</u> वानाति विशिष्टिकः	
NO-45-01748	ं शिक्ष्य रिक्ष्यकाम् विकास अभिने विभागतः विवासकारम् अने स्थान	

#### **FEATURES**

- High resolution 22-bit digital to analog (D/A) converter.
- User selectable output voltage range:
   0 to 10 mV, 0 to 100 mV, and 0 to 1.0 V.
- Available option: 0 to 10.0V range.
- Output conversion rates:
   0.5, 1.0, 2.0, 5.0, 10.0, 20.0, and 50.0 Hz.
- MS Windows<sup>™</sup> 3.1 based software.
- Three report options:

Overlay:

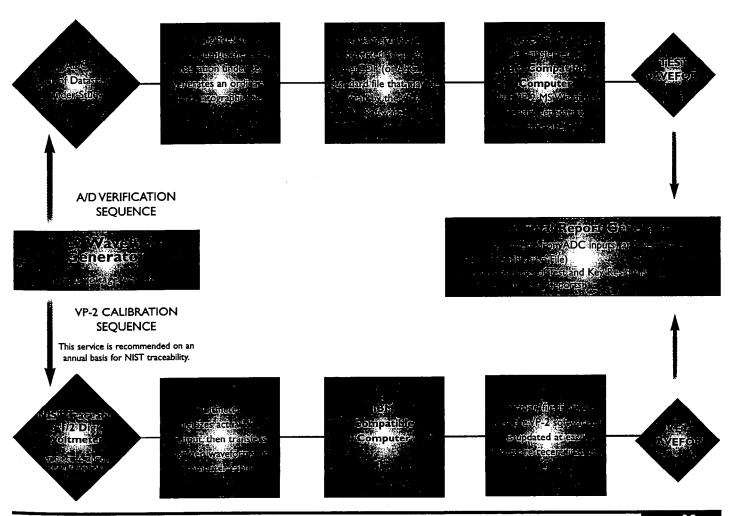
Overlays traceable VP-2 output with test waveform.

Graph:

Unique to each waveform, displays specific test information.

Summary:

Text report summary of all data.



# 0EM

#### Optimize Components for OEM HPLC Systems

This section of our catalog contains information about replacement HPLC components from Optimize designed specifically for OEM systems. On the next few pages, you'll find general information about products like OPTI-MAX® Cartridge Check Valves, OPTI-SEAL® piston seals, and other accessories offered for multiple OEM systems, as well as reference articles containing useful technical information on topics like periodic maintenance and check valve repair. Optimize manufactures precision-machined components for a large selection of solvent delivery systems from over 20 manufacturers. Starting on page 50, you'll find sections containing comprehensive product listings for each of these HPLC brands, organized alphabetically by manufacturer's name. Look for your brand in the table of contents on page 5, or use the EZ Locator chart below. Manufacturers' names are listed at the top of each page in the OEM section. Specific pump models are listed separately within each section, to guide you quickly to Optimize components designed specifically for your particular pump brand and model.

#### The Cost of Time

For your laboratory to be competitive, it must remain productive. The racks of samples lined up for analysis must make the trek from autosampler to data file smoothly and reliably, by way of your HPLC. And if your HPLC system goes down with an unexpected maintenance problem, there is one thing of which you can be sure: fixing the problem is going to cost you time and money. Replacement HPLC components can be expensive, but these costs are peanuts in relation to the cost of lost analysis time. For most productive labs, the opportunity cost of a single HPLC system sitting idle with a maintenance problem can reach into the thousands of dollars.

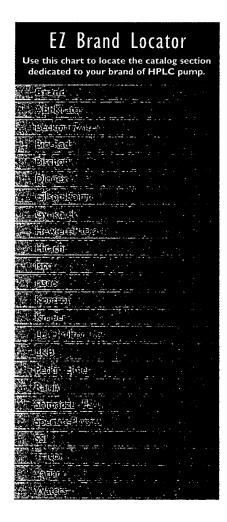
At Optimize, every component we manufacture is designed with an important purpose in mind: to keep your HPLC system operating at peak performance between scheduled maintenance periods. We precision-machine our OEM replacement components to the most exacting standards in the industry. Balls and seats used in our OPTI-MAX cartridge check valves are precisely matched to meet leak-test benchmarks four times more stringent than the industry standard. OPTI-SEAL and ITB™ piston seals are engineered to provide longer lifetimes and superior shedding characteristics. Replacement pistons from Optimize offer excellent concentricity and consistent surface finish. Whether you are buying a fitting, a priming valve or a complete pump head assembly from Optimize, you can always be sure that our commitment to quality and innovation is paramount.

#### OEM Components: The Truth of the Matter

Most instrument manufacturers will tell you quite emphatically that for optimal instrument performance, you should use only components that meet their performance specifications. At Optimize, we couldn't agree more. Every replacement component we offer is fully guaranteed to meet or exceed the specifications of the original equipment manufacturer. In fact, Optimize already produces HPLC components for several OEM manufacturers that are incorporated as original equipment on new HPLC instrumentation. Researchers and manufacturers alike are discovering that when it comes to replacement HPLC components, precision and innovation can have a very dramatic effect on the bottom line.

#### Your Resource for New Innovations

At Optimize, we offer a comprehensive selection of components for most brands of HPLC system, but we're always seeking new ways to bring you new products that will save your laboratory time and money. If you have a need for a product you don't see listed in this catalog, please call a technical support representative to discuss your particular fluid handling challenges.



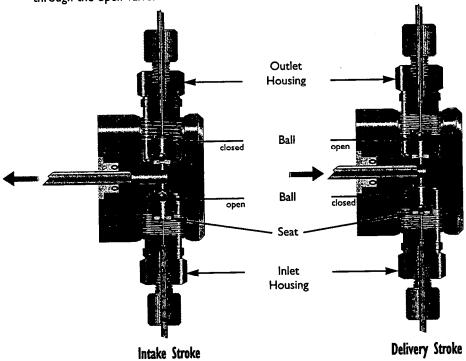
Check Valves:
A Guide To
Function &
Maintenance

Check valve replacement is one of the most common HPLC maintenance challenges. While theoretically simple, it can become a time-consuming and frustrating service problem. Proper check valve operation is a key to reliable pump performance, and the ability to diagnose and correct check valve problems rapidly is vital to minimizing productivity loss in your laboratory.

#### Check Valve Operation

The mechanics of check valve operation are not complicated. Inside most check valves, a ball of a certain diameter sits freely above a seat containing a single through-hole with a diameter slightly smaller than that of the ball. Liquid should not pass the check valve in any way but through the seat. When the pressure behind the seat exceeds that above the ball liquid flows through the valve. When the pressure above the ball exceeds the pressure below the seat, the ball returns to rest in the seat, forming a seal and preventing solvent backflow.

Most modern HPLC pumps deliver solvent at high pressure using two reciprocating pistons in series or parallel. Check valves are located in series above and below the piston restricting flow to a single direction, usually upward. As the piston completes a delivery stroke and begins the intake stroke, the pressure inside the pump head drops. High pressure above the outlet check valve causes it to seal, while the inlet check valve opens as solvent is drawn through it and into the pump head. When the piston switches direction for the compression stroke, the pressure inside the head increases, and soon exceeds the pressure below the inlet check valve. The inlet valve seals, then the outlet opens, and solvent flows up through the open valve.



Numerous factors determine how effectively and reliably a check valve will perform. First and foremost, it is the integrity of the seal made between ball and seat that defines a check valve's performance. Other factors such as the weight of the ball and the amount of travel it is allowed within the valve affect the response time of the valve. Check valves must seal rapidly in response to pressure changes if pump pulsation is to be minimized, but the amount of ball travel allowed must be sufficient to allow unrestricted solvent flow through the valve.

#### Weighing Your Options

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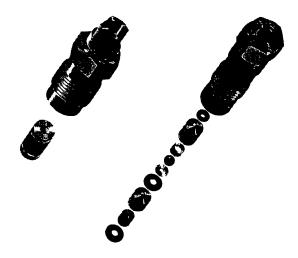
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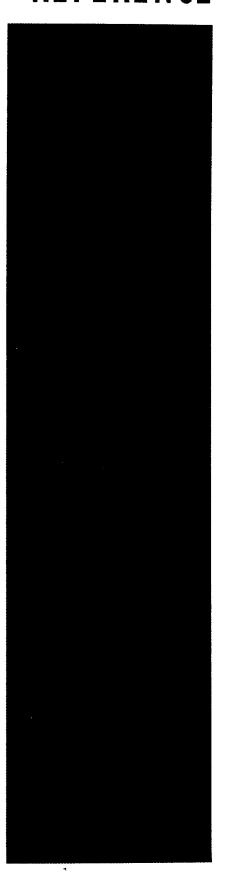
Cartridge-based check valve systems are by far the most convenient and reliable means of check valve replacement. Pre-assembled check valve cartridges are inserted into a reusable housing, giving you the economy of a rebuild kit without the substantial risk of contamination. Our OPTI-MAX® Cartridge Check Valve System is the most versatile and durable cartridge-based replacement check valve system available. Cartridges are available in several configurations, loaded with precision-matched ball & seat sets leak-tested to the tightest specifications in the industry. A single OPTI-MAX cartridge fits OPTI-MAX inlet and outlet housings for multiple pump brands, so you can keep your check valve inventory to a minimum.

The modular nature of cartridge-based replacement check valve systems has allowed for greater flexibility in the selection of materials used for balls, seats and cartridge bodies. Check valves containing ruby balls and sapphire seats continue to be a popular choice for HPLC users, but ceramic ball and seat sets have been steadily gaining acceptance. Because ceramic has a density 1.5 times that of ruby, the heavier ceramic ball should seat more rapidly, improving check valve performance for some applications. OPTI-MAX check valve cartridges are available with balls and seats made from ceramic or ruby/sapphire, loaded into PEEK or stainless steel cartridge bodies. For general use, stainless steel cartridges offer excellent solvent compatibility and mechanical strength, and are an excellent choice for most HPLC applications. For biocompatible HPLC systems, PEEK cartridges provide a completely bio-inert flowpath when used with PEEK OPTI-MAX housings. When bio-inertness is a requirement, we recommend PEEK cartridges with ceramic balls and seats. Look for our cartridge type recommendations in the Cartridge Code Charts within each OEM manufacturer's section. For more information about OPTI-MAX cartridge check valves, please refer to page 40.

For those who prefer to rebuild their own check valves or purchase complete pre-tested check valve assemblies, Optimize offers direct OEM replacement check valves and rebuild kits for a variety of manufacturers' HPLC pumps. If you choose to rebuild check valves yourself, minimize the chance of contamination by performing the rebuild procedure in a clean and dust-free environment.



Check Valves can be replaced using cartridge-based systems (left) or pretested assemblies and rebuild kits (right)



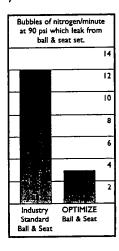
# **OPTI-MAX®**

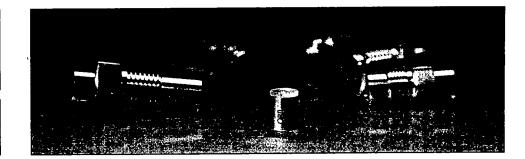




#### **FEATURES**

- Cost efficient. Cartridges eliminate many components used in conventional check valves. Interchangeable cartridges reduce inventory.
- Simple to use. Rebuild check valves by dropping a cartridge into the housing.
- · One cartridge fits multiple brand housings.
- PEEK and SS cartridges are available for standard, microbore and extended flow applications.
- 100% tested.
- Clean-room assembled.
- Custom designed housings provide best fit and easy installation.
- Reduced pulsation due to a precise and low amount of ball travel: 2 -3 times less than typical industry standards.
- The balls and seats used in OPTI-MAX® cartridges must pass the Nitrogen leak test to a standard four times more stringent than that specified by most other manufacturers.





#### OPTI-MAX® Cartridge Check Valve System

One thing you can be sure of in HPLC is that the check valves in your pump will eventually need to be replaced. Your options for check valve replacement are numerous, but comparing these options can be difficult, as features, specifications, materials, and performance claims can vary greatly with each manufacturer. Fortunately, you only need to be sure of two things when choosing a replacement check valve system for your laboratory. First, you need a system that lets you replace check valves quickly and easily. Second, you need a check valve that is going to perform reliably and consistently between scheduled maintenance periods.

The OPTI-MAX Cartridge Check Valve System from Optimize is designed to offer maximal performance and ease of use. Every aspect of design and manufacture, from the sharp, consistent threads on OPTI-MAX custom housings, to the exacting standards required of the matched balls and seats used in OPTI-MAX cartridges, is tightly controlled for a single reason: when it comes to reliable check valve operation, quality and precision make a big difference.

#### OPTI-MAX Cartridges: A Universal Solution

A single OPTI-MAX cartridge is interchangeable across multiple pump brands, and will function in either the inlet or outlet position. The same cartridge will fit into pumps made by Shimadzu, Waters, Hitachi, and most other OEM solvent delivery systems, allowing you to minimize the number of spare check valve cartridges in your inventory. OPTI-MAX Cartridges are available in PEEK or stainless steel, loaded with precision-matched ball and seat sets in ceramic or ruby/sapphire. Three ball/seat sizes are available, providing optimal performance for microbore, standard and extended flow applications.

The performance of a check valve can only be as good as the integrity of the seal made between the ball and seat inside it. All ball and seat sets used in OPTI-MAX cartridges are precision-matched to the most exacting standards in the industry, and must pass Nitrogen leak tests four times more stringent than those specified by most other manufacturers.

#### Free-Turn™ Housings: An Optimize Innovation

Most OPTI-MAX check valve housings for OEM systems now incorporate a Free-Turn feature. This time-saving innovation lets the external housing thread twist independently of the tubing port, allowing you to remove OPTI-MAX housings from your pump head without first disconnecting the attached tubing. This simple design improvement will shave minutes off the time required to replace a check valve cartridge, and will prolong the life of your polymeric tubing and fittings by minimizing damage and wear caused by their repeated removal and retightening.

	EZ OPTI-MAX® Locator
ere Errange	- 1980年 - 1983年 - 1985年 - 2087 - 20
350065-1/405 <sup>3</sup>	Exemple Exemple Exemple 1991
Sallo Rec	RESIDENCE RESIDENCE (No. 1999)
#Poits	Particular Article

Use this chart to locate OPTI-MAX Cartridge Check Valves for your HPLC pump.

# OPTI-MAX®

# OPTI-MAX® Cartridge Check Valves: Using the Cartridge Code

When you order the OPTI-MAX Cartridge Check Valve System for your HPLC pump, you have a choice of cartridge and ball/seat materials. OPTI-MAX Cartridges are available in both stainless steel (SS) and PEEK, and are loaded with precision-matched sets of ceramic or ruby/sapphire balls and seats. You can easily select the type of cartridge you need using the Cartridge Code Chart that appears next to every OPTI-MAX product listing in the brand-specific sections of this catalog. For more information on selecting cartridge and ball/seat materials, refer to page 39.

Part numbers for OPTI-MAX products throughout this catalog contain a middle set of digits called the Cartridge Code , that you can use to specify the type of cartridge you need. When you see a part number such as 34-60-00902, simply follow the blue arrow behind the symbol to a set of codes corresponding to your OPTI-MAX cartridge choices. Find the two-digit code that matches your preferred cartridge type, and substitute that number for to produce the part number you need. There may be more than one set of codes listed in a single table, so be sure to follow the arrow from your instrument section to the correct set of codes for that instrument.

To demonstrate the OPTI-MAX Cartridge Code ordering system, we'll build some example part numbers using the OPTI-MAX ordering guide below.

#### SAMPLE TABLE

#### OPTI-MAX® Cartridge Check Valves

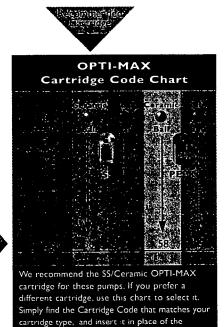
#### Shimadzu LC-6A, LC-10AS ← FREE-TURN™

Туре	OPTI-Part	# Description	OE	M#	Price
INLET	JE 34 000	02 OPTI MAX I	let Housing & Cartridge	12353	917 / <b>S 198</b> 1
OUTLEFA	34 009	07#GPTI-MAX	outled Housing & Cartridge is s. 1, 1226	-09054	93 2 7 1
CARTRIDO	FE 10 020	04 OPTI-MAX R	eplacement:Cartridges; 1/8"; Ball -2/Pk +		
	2.3	李慈、《李本学》	其2000年,此一所,而是2000年的中央中央中央	\$ 5 g 3. 110	Balle Land

If you have a Shimadzu LC-10AS pump and wish to order stainless steel replacement cartridges with ceramic balls and seats, follow the blue arrow behind the cartridge code symbol to the group of four Cartridge Codes listed for this Shimadzu system. The correct choice for a stainless steel/ceramic OPTI-MAX cartridge is 56. By substituting this code for in the part number for replacement OPTI-MAX cartridges, you get 10-56-02004.

If you need to order an inlet housing with a PEEK/ceramic OPTI-MAX cartridge, the procedure is the same. The Cartridge Code Chart indicates that the for this OPTI-MAX cartridge is 58. The correct part number (34-58-00902) is found by substituting 58 for in the part number listed for an inlet housing and cartridge.

For each pump brand and model, we recommend use of a particular OPTI-MAX cartridge. Be sure to look for recommended cartridges highlighted within each Cartridge Code Chart. If you have questions about finding the correct part number for the OPTI-MAX cartridge you require, please call our Technical Support Department.



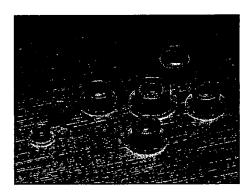
CC in the OPTI-MAX part number to your left.

See page 41 for more information.

Selecting A
Piston Seal
For Your
Application

Today's HPLC methodologies can require a variety of mobile phase constituents, delivered over a range of operating temperatures and using unique solvent delivery parameters. When selecting a piston seal for your HPLC system, you should always take into consideration the operating conditions required for your particular application.

Optimize manufactures replacement piston seals using either of two long-lasting, versatile polymer-based materials, specifically formulated to provide longer seal lifetimes and superior wear characteristics. Our OPTI-SEAL® pump seals are machined from OS-10.1™, a proprietary UHMW-Polyethylene blend. We also offer ITB™ (Improved Teflon® Blend) seals, made from a proprietary PTFE-based material.





#### Selecting A Seal: Chemical & Mechanical Considerations

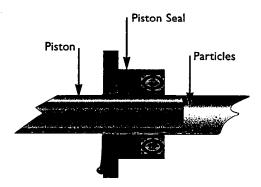
So which seal works best for what? Selecting the best seal for the application is fairly easy, providing you know what to consider. While other variables play a role, the composition of your mobile phase will be the primary factor in determining which pump seal will work best for your application. UHMW-Polyethylene pump seals will typically yield longer lifetimes than PTFE seals under wholly or mostly aqueous conditions; the UHMW-PE polymer is a harder material than PTFE, and is much more resistant to abrasion. Conversely, PTFE performs well in mobile phases that are more strongly organic in composition. Because it is softer, PTFE will also be more likely to conform to a plunger that is worn or has flat spots, or one that is misaligned or out-of-round. Plungers that show visible signs of wear and/or damage should be replaced as soon as possible, however, as they will cause accelerated wear of the plunger seal. Any savings realized by continued use of a damaged plunger will be more than offset by increased seal consumption and an overall increase in instrument maintenance and downtime.

A second consideration is that of solvent compatibility. PTFE is impervious to almost all common HPLC solvents, but a select few mobile phase constituents can be a problem. Likewise, polyethylene exhibits excellent overall solvent resistivity characteristics, but is susceptible to attack by certain organic solvents and strong oxidizing agents. For more specific information on seal material-solvent compatibilities, please refer to the table on page 8.

#### Seal Shedding: Avoiding Problems with Particulates

It's an unavoidable fact: by design, the piston seals in your HPLC pump are subject to wear, and will eventually contribute in some degree to particulate contamination in your mobile phase. Obviously, the trapping and removal of these seal shedding particulates via in-line filtration is a vital precaution. At Optimize, we also address seal shedding problems well in advance of the moment you place a new seal in your pump head. We incorporate optimal system protection by design, by paying careful attention to the shedding characteristics of the polymers used in the manufacture of our OPTI-SEAL and ITB piston seals.

As a PTFE-based seal wears, small particles of PTFE and graphite filler are sloughed off from the internal seal wall, and swept into the mobile phase. Many original equipment seals can shed particulates as small as 0.5 micron, and smaller. Particles of this size can be especially problematic for your HPLC system, as they will either pass through or rapidly block 2 micron in-line filter and column end frits. Our ITB polymer has been specifically formulated to shed particles large enough to be trapped at the surface of a 2 µm frit, allowing more reliable filtration of shedding particulates, and minimization of back-pressure problems due to frit clogging.



The OS-10.1 UHMW-PE blend used in our OPTI-SEAL piston seals is five to ten times more resistant to wear than typical PTFE-blend seals, and offers drastically reduced shedding under mostly or wholly aqueous or buffered-aqueous conditions. Also, since the OS-10.1 material is a homogeneous polymer, any particulates that might shed from an OPTI-SEAL will tend to be stringy fibers that do not cause complete frit blockage.

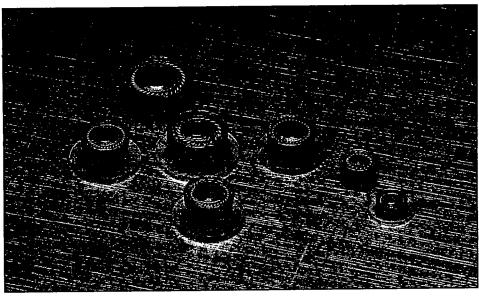
#### **Making Your Selection**

As the best choice of seal material ultimately depends on the composition of your mobile phase, then you already have most of the information you need to make a decision. In short, both UHMW-PE and PTFE-based seals will perform well across the mobile phase spectrum. The superior wear characteristics of UHMW-PE will be most dramatic in reverse phase applications where aqueous or mostly aqueous mobile phases are used. In situations where a high percentage of strong organic solvents are required, or where the seals will be operated at high temperatures, a PTFE seal is the better choice. If you use multiple HPLC systems and run a variety of mobile phases, it can be beneficial to dedicate systems to specific applications according to mobile phase requirements. By reserving an adequate number of instruments specifically for applications requiring high organic content mobile phases, you can limit your PTFE seal usage to these systems, and equip your other HPLC instruments with longer-lasting polyethylene seals.

For additional information on solvent compatibilities, or for a specific seal recommendation based on your operating conditions, please contact our Technical Support Department.



# PUMP SEALS

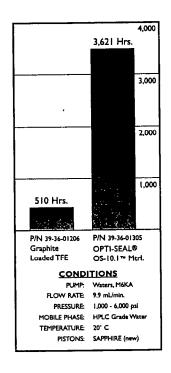


#### Replacement Pump Seals From Optimize

Replacement pump seals from Optimize are the seal of choice for longer lifetimes and superior wear characteristics. Available for most OEM analytical HPLC systems, Optimize pump seals are precision-machined from either of two polymer-based materials. An exclusive UHMW-PE blend is used for OPTI-SEAL® pump seals, and our ITB™ (Improved Teflon® Blend) pump seals are machined from a PTFE-based material. The polymer blends used in Optimize seals are carefully selected to provide optimal shedding characteristics and reduced friction, and to be completely free of extractables that might otherwise interfere with your analysis.

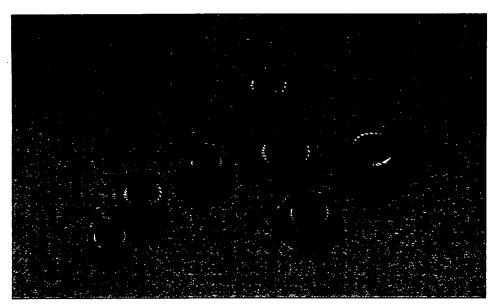
#### OPTI-SEAL: Superb Performance in Aqueous Conditions

OPTI-SEAL pump seals from Optimize are the longest-lasting seal you can buy for use in mostly aqueous or aqueous-buffered mobile phases. Made from OS-10.1 ™, a proprietary UHMW-PE-based material, OPTI-SEAL pump seals are much more resistant to wear than traditional PTFE-based seals, and can last up to seven times longer than traditional seals under mostly aqueous conditions. The OS-10.1 polymer is optimized for HPLC sealing applications. It has a coefficient of friction approaching that of Teflon, thanks to special additives that reduce friction between the seal and the piston surface but do not contribute extractable contaminants. Because the UHMW-PE blend is a homogeneous polymer, it also exhibits superior shedding characteristics. Overall shedding is minimized due to increased resistance to wear, and the particles that are shed tend to be long, stringy fibers that are less likely to clog frits or tubing.



EZ OPTI-SEAL <sup>®</sup> Locator	
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# PUMP SEALS



Improved Teflon® Blend™: Optimal Performance By Design

ITB pump seals are a superior choice to most OEM graphitized-carbon/Teflon seals. Our proprietary PTFE-based Improved Teflon Blend (ITB™) polymer is designed to shed particles large enough to be trapped at the surface of a 2 µm frit. Many OEM PTFE-based seals shed particles as small as 0.5 micron; particles of this size have the greatest potential for causing frit blockages, leading to increased back-pressure. ITB seals are excellent for applications requiring elevated temperatures or mobile phases with high organic content. The ITB polymer exhibits broad compatibility with most HPLC solvents. PTFE-based seals tend to be softer than those made from UHMW-PE, and will more likely maintain a seal at high pressure in situations where piston side-loading or misalignment occurs; they will also conform more readily to a worn piston.

#### A Multi-Seal Strategy

It can be very beneficial to keep both OPTI-SEAL® and ITB pump seals on hand in your laboratory. Seal lifetimes can be maximized by using OPTI-SEAL for mostly aqueous-based applications, and switching to ITB for applications that employ higher amounts of organic solvents. This multiple seal strategy can be even more effective if you have several HPLC systems available. By dedicating certain systems for applications where PTFE-based seals are required, the remainder of your HPLCs can be equipped with OPTI-SEAL for maximum seal lifetime and minimal shedding.

OPTI-SEAL and ITB pump seals are available for a wide selection of HPLC pump brands and models. For more information on Optimize pump seals for your type of pump, please use the EZ Locator Chart below to find the page number corresponding to your pump manufacturer. For more information on selecting the best seal for your application, please refer to page 42, or call Technical Support at 800-669-9015.

E	Z ITB <sup>**</sup> PTFE P	ump Seal Locator
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Bio-Radi		AND SALES
Bischoff		X STORE
Dioneca	150°	Shirt dept. 18-4
Gilson/Ratelli	Khue	* Special Strate Section Secti

# HPLC FIRST AID KITS™



To minimize HPLC system down-time, you must be prepared for unexpected maintenance problems. Whether you maintain your own HPLC pump or call a service professional, you need to have rapid access to vital system components, so that you can fix the problem quickly and get back to your chromatography.

HPLC First Aid Kits™ from Optimize are an excellent way to keep minor component failures from becoming a major problem. They contain a useful selection of replacement parts, all in a single kit specifically tailored to your HPLC pump. Each kit also includes an inventory list and order form for convenient kit restocking, as well as a recommended stocking list for your brand and model of pump. A fully-stocked HPLC First Aid Kit stored nearby your system will equip you with every component you need to remedy most common pump problems as soon as they occur.

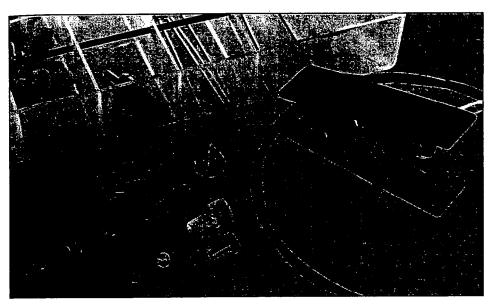
#### **HPLC** First Aid Kits Include:

- OPTI-MAX® Inlet Housing/Cartridge Check Valve
- OPTI-MAX Outlet Housing/Cartridge Check Valve
- OPTI-MAX Replacement Cartridge Check Valves (2/pk)
- OPTI-SEAL® UHMW-PE Pump Seals (5)
- OPTI-LOK™ 6K SS Nuts/Double Tight Ferrules (2 of each)
- Optimize Solvent Reservoir Filter
- Piston

Pricing and part numbers for HPLC First Aid Kits are listed within each of the OEM manufacturer sections of this catalog. Use the EZ Locator chart below to find the page number corresponding to your brand of pump:

E	Z HPLC First /	Aid Kit" Locato	r
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FB6-R6	A CONTRACTOR	e Participation	PAYOFE F
Marienell'	alego:	Karali I	10 Water
	Heer V		***************************************
Individual components may vary acc	ording to pump brand and model.	For complete information on kit co	ntents for your HPLC pump, please

# HPLC FITTINGS KITS



HPLC Fittings Kits from Optimize contain a useful selection of our precision-machined fittings, tubing and other accessories, specifically tailored for the connection requirements of your HPLC system. To locate the best kit for your HPLC brand and model, use the EZ Locator Chart at the bottom of this page. We also offer Universal HPLC Fittings Kits containing fittings and tubing for making common connections on multiple HPLC systems.

Pricing and part numbers for HPLC Fittings Kits are listed separately within each of the OEM manufacturer sections of this catalog. Use this EZ Locator chart below to find the page number corresponding to your brand of pump:



Better Performance Through Periodic Maintenance

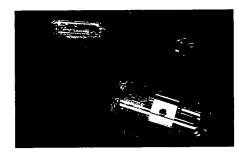
As with most analytical instruments, HPLC systems require periodic maintenance if they are to perform optimally. There are two basic approaches to maintenance of an HPLC system; some laboratories may choose to establish a specific schedule for replacement of key system components, while others might employ a "fix it when it breaks" philosophy. The ultimate goal of any effective maintenance plan should be to minimize instrument down-time wherever possible. Implementation of a regular, periodic maintenance plan is the best way to achieve this goal, and can also play an important role in meeting regulatory compliance guidelines. Outlined below are recommended maintenance schedules for some commonly replaced HPLC system components. These schedules can be used as general guidelines to assist you in implementing a periodic maintenance schedule for your HPLC system(s), but can be adjusted based on your experience with maintenance cycles in your laboratory, in order to more closely match your operational conditions.





#### Piston Seals

No other wetted component within a typical HPLC system experiences as much direct wear as the piston seal. The average lifetime of a piston seal will vary somewhat depending upon related parameters, such as the seal material, the composition of the mobile phase, the presence of particulates or precipitated salts around the seal, and the condition of the piston itself. Most laboratory P.M. schedules call for replacement of the piston seal on a quarterly or semi-annual basis. In general, the piston seal should be replaced at least once every six months, providing there is no excessive and unusual wear due to the factors listed. Where conditions are less than optimal, more frequent replacement will likely be required.



#### **UV** Detectors

For UV detectors, source lamps are the most common consumable item requiring routine replacement. The frequency of replacement will vary depending upon the amount of usage, but it can be estimated based upon the frequency of use and the anticipated lifetime of the lamp. Typically, source lamps will require replacement annually or semi-annually.

#### **Pistons**

The pistons inside an HPLC pump typically do not require routine replacement, but they too are subject to wear, and should be inspected as part of the P.M. schedule. They should be examined at least once a year, and preferably whenever the seal is replaced. Close examination of the surface finish can reveal potential problems such as flat spots, out-of-roundness, adhered particulates or buffer salts, scratches and cracks. Light microscopes can be useful for inspecting the condition of a piston. Particular attention should be paid to the piston when UHMW-PE seals are to be installed in place of PTFE-based seals. UHMW-PE provides considerably longer seal lifetimes when used with mostly aqueous mobile phases, but the PE material is less forgiving than the softer PTFE blend. A worn or damaged piston that performs adequately with a PTFE seal may cause problems with UHMW-PE. When switching to UHMW-PE seals after using PTFE, it is usually a good idea to replace the piston at the same time.



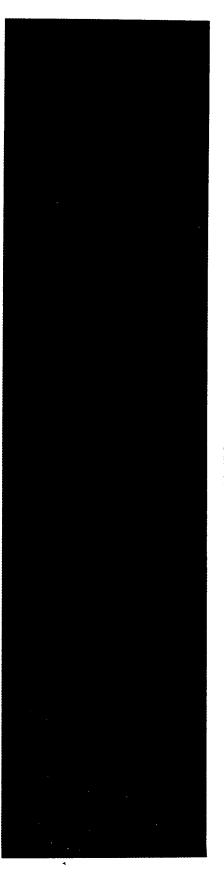
#### Check Valves

As with piston seals, the lifetime of a check valve will vary depending upon chromatographic conditions. The ball and seat are subject to wear, and the ball may also become coated with particulates or other matter, causing sealing problems. The majority of laboratories routinely replace check valves every six months. Once again, longer or shorter lifetimes may be the norm in your laboratory, and the frequency of replacement may require some adjustment. When replacing check valves, both complete rebuild kits and replacement cartridge check valves are viable options. Of these, cartridge-based systems are usually the preferable choice, due to greater convenience and reliability, and reduced risk of contamination during installation.

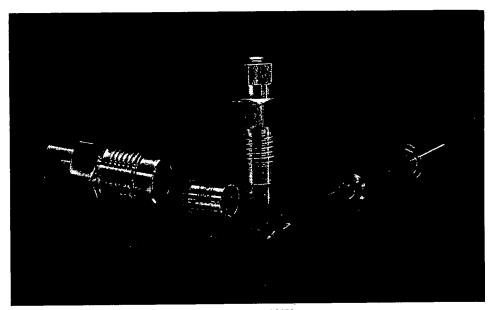


#### Autosampler or Injection Valve

For most sample injection devices, the only components that require regular replacement are rotor seals and liquid seals. This can usually be performed on an annual basis.



# ABI/KRATOS



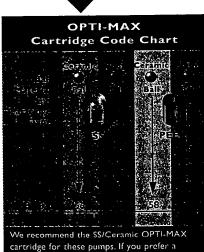
OPTI-MAX® Cartridge Check Valve System and Piston for ABI/Kratos

For maximum performance and proven reliability, choose OPTI-MAX Cartridge Check Valves for your ABI/Kratos HPLC system. Universal OPTI-MAX cartridges function as both inlet and outlet check valves, and fit multiple pump models (and brands) using custom-designed housings.

Replacing check valves is a snap — just remove the housing, tap out the old cartridge and put in a new one. Innovative Free-Turn™ housings let you switch cartridges without removing your connecting tubing.

OPTI-MAX cartridges are available in either stainless steel or PEEK, loaded with ceramic or ruby/sapphire matched ball and seat sets. Select the cartridge you require using the chart below. See page 41 for more information.





different cartridge, use this chart to select it. Simply find the Cartridge Code that matches your cartridge type, and insert it in place of the CC in the OPTI-MAX part number to the right.

See page 41 for more information.

number from this chart to select the cartridge type you need.

#### OPTI-MAX® Cartridge Check Valves

#### ABI/Kratos Spectraflow 400 \$ FREE-TURN™

Туре	OPTI-Part #	Description	OEM #	Price
INLET#	21 00451	OPTI-MAX Inlet Housing & Cartridge (	7200-0060	
OUTLET	2] 00460	OPTI-MAX Outlet Housing & Cartridge	7200-0062	
CARTRIDO	E # 105 2 02004	OPTI-MAX Replacement Cartridges, 1/8'	Ball, 2/Pk	
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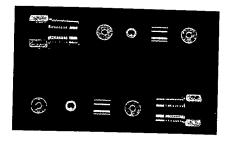
# ABI/KRATOS

For those who prefer purchasing standard check valve assemblies or repairing check valves with rebuild kits, we offer these precision-machined replacement parts, guaranteed to meet or exceed OEM specifications.

#### Standard Check Valves

#### ABI/Kratos Spectraflow 400

Туре	OPTI-Part #	Description	OEM #	Price
AND EASIE	2428-004-9	Jeseo Inies 1/87 - 1777 - 1	720020060	
OUTLET		Tereforierie:	72000000	
REBUILD	:: 21-38-00449 ::	Rebuild Kit, 1/8" (Rebuilds 2		Sile in the
REBUILD	21-38-00450	Rebuild Kit, 1/16" (Rebuilds	2)	WALLSTON

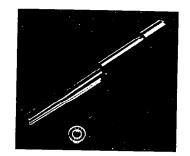


Replacement seals and pistons from Optimize offer superior performance and reliability, and are designed to meet or exceed the specifications of their OEM counterparts. For more information on selecting the best seal for your application, please refer to page 42.

#### Seals and Pistons

#### ABI/Kratos Spectraflow 400

Type	OPTI-Part #	Description	OFM #	Price
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	19 400 Eth	Subplicitation.	5 E F F P LK 100E 1970	



Don't let unexpected pump malfunctions catch you by surprise! Optimize offers HPLC First Aid Kits<sup>™</sup> equipped with a complete set of precision components for your ABI/Kratos pump, giving you rapid access to the parts you need to keep your system running. We also offer Fittings Kits which contain a useful selection of fittings, unions and plugs, value-priced and specifically tailored to your HPLC pump. See pages 46-47 for more information about accessory kits from Optimize.

For your convenience, we offer these replacement lamps for your UV detector, which are guaranteed to meet or exceed original manufacturer's specifications.

#### Accessory Kits and Lamps

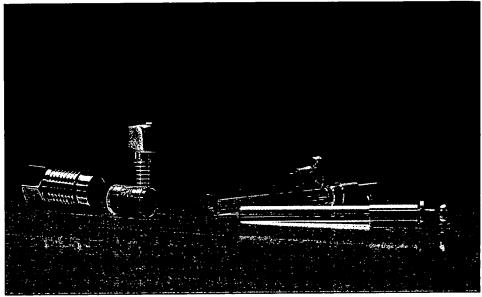
#### ABI/Kratos Spectraflow 400

OPTI-Part #	Description	OEM #	Price
21-08-00433	HPLC First Aid Kir Spectraflow 400 is	1.00	V-101/400
21-08-00432	Fittings Kit, All ABI/Kratos	enale i la sie platinge diffeje	
	21-08-004334 21-08-00432	21-08-00433 FILE First Aid Kit Spectraflow 400 33 21-08-00432 Fittings Kit, All ABI/Kratos	21-08-00433 4 KHPLC First Aid Kir Spectraflow 400 3 1/2 1/2 1/2 1/2 1/2 1/2 1/2 1/2 1/2 1/2



Fittings Kit

# BECKMAN/ALTEX



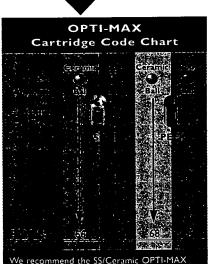
OPTI-MAX® Cartridge Check Valve System and Pistons for Beckman/Altex

For maximum performance and proven reliability, choose OPTI-MAX Cartridge Check Valves for your Beckman/Altex HPLC system. Universal OPTI-MAX cartridges function as both inlet and outlet check valves, and fit multiple pump models (and brands) using custom-designed housings.

Replacing check valves is a snap — just remove the housing, tap out the old cartridge and put in a new one. Innovative Free-Turn™ housings let you switch cartridges without removing your connecting tubing.

OPTI-MAX cartridges are available in either stainless steel or PEEK, loaded with ceramic or ruby/sapphire matched ball and seat sets. Select the cartridge you require using the chart below. See page 41 for more information.





cartridge for these pumps. If you prefer a

e page 41 for more information.

different cartridge, use this chart to select it. Simply find the Cartridge Code that matches you cartridge type, and insert it in place of the CC in the OPTI-MAX part number to the right

#### OPTI-MAX® Cartridge Check Valves

Beckman 100A, 110A/110B, 112/112M, 114/114M, 116, 118, 125, 126, 127, 128 **♀** Free-turn™

Туре	OPTI-Part #	Description	OEM #	Price
INLET	226600516	OPTI-MAX Inlet Housing & Cartridge	,240720	
OUTLET	i : :22 @ : 00520	OPTI-MAX Outlet Housing & Cartrid	ge 240721	
CARTRID	GE 10 02005	OPTI-MAX Replacement Cartridges,	3/16" Ball, 2/Pk	1.00
latadigues	ရှင္သောမ်း numbe	from this chart to select the cartridge	type you need.	

# Finding Parts for Beckman System Gold

# BECKMAN/ALTEX

For those who prefer purchasing standard check valve assemblies or repairing check valves with rebuild kits, we offer these precision-machined replacement parts, guaranteed to meet or exceed OEM specifications.

#### Standard Check Valves

#### 100A,110A/110B

Type	OPTI-Part #	Description	OEM #	Price
INLET	<b>*4</b> 1/22-38-00501/a	rated inlet (Old Style) * 4 449	Server level 243054 pr	*####
REBUILD	22-38-00506	Rebuild Kit (Rebuilds I) - " * " p	arts included	
	22438:00509	unles Housing		
***	22-38-00510	Washer Seal	243711	过度影响的.
	200408-0131h	3/164 Bally& Seat 9-9-17-55 129		
	22-38-00511	3/16" Ball Retainer		3.76亿分的专门
**************************************	794384015245	Rume Reservaster Keller	<b>6 7 年 第</b> 第 24809 F8 8	



Tested Inlet Check Valve (Old Style)

#### 112/112M, 114/114M, 116, 118, 125, 126, 127, 128

Туре	OPTI-Part #	Description	OEM #	Price
INLET	### 222-38:005046		<b>24</b> 30 38 <b>3</b> 4 4 4 4 4 4 4 4 4 4 4 4 4 4 4 4 4 4 4	
REBUILD'	22-38-00507	Rebuild Kit (Rebuilds I) – " ★ " par	rts included 💎 💯 📆	理的标准
		interforage is a second		
★(2)	7: 22-38-01318 S	Kel-F Washer, Inside	244187	能認為
<b>→</b> (2) <b>→</b>		Simin Ballstein	######################################	
<b>非独特的</b>	a 22-38-00512	3 mm Ball Retainer		
X	25±38(005)8	CH-Weblow Quidid - Vice -	57 (\$5.00 F) 7/1058 PE	



Tested Inlet Check Valve (Old Style)

### 100A, 110A/B, 112/112M, 114/114M. 116, 118, 125, 126, 127, 128

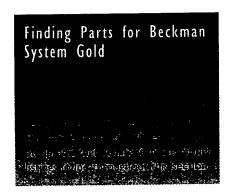
Туре	OPTI-Part #	Description	OEM #	Price
OUTLET	27-38-00505	Tested Outlet (Old Style) at Lea	######################################	
REBUILD	22-38-00502	"Rebuild Kit (Rebuilds I) – "★" p	arts included	制体验证
* 1	# , <b>#95</b> #818-00597/15		# \$ 14	
★(2)	22-38-01310	. 3 mm Ball/Seat	243659	计数据数
	# 1-22-38-005 (2°C	From Ball Retainer 1994		
★(2)	22-38-01318	Kel-F Washer, Inside	244187	<b>的时间</b>
	3 90 38 200 SIST	Contentionsing and Spirite (S		

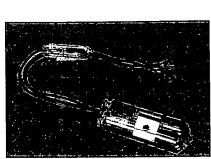


Tested Outlet Check Valve (Old Style)

# BECKMAN/ALTEX

Seals and Pistons for Beckman/Altex Pumps





Lamp for Beckman/Altex M-163 and M-166 Detectors

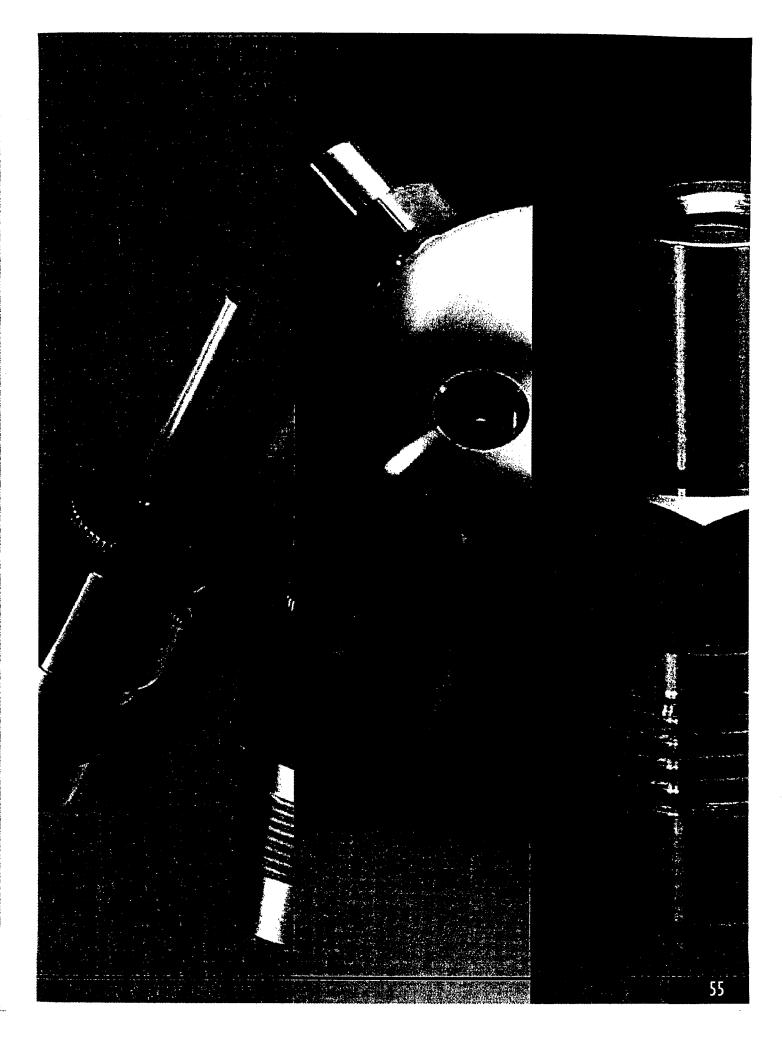
Replacement seals and pistons from Optimize offer superior performance and reliability, and are designed to meet or exceed the specifications of their OEM counterparts. For more information on selecting the best seal for your application, please refer to page 42.

Seals and Pistons							
Type			Seals a	nd Pisto	ons		
TE	•	OPTI-Part #		- A			Price
Price							
Beckman   105,   110 Prep   Description   Description   OEM # Price		は のでは 10 年 年 行 (1 年 ) という エロン (1 ) A (1 ) という (1 ) という	CONT. C. SAME CONTRACTOR AND THE CONTRACTOR			68/\se	
Beckman   105,   110 Prep   Type			edina e e e	1, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1		A 10	
Type	* [oto]* * E	2240 Ocazet				P. Louis E	
100   100						0514 #	Dutas
18	Туре	OPTI-Part #		in letter this is a			Price
Title				THE A			
Beckman     12 /     12 M	2% D:			inger skalender Er and de andere		an out the Fig.	
Beckman     12 /     12 M			The same of the sa	when the wanted broken with the co-		1918//1957-	4.72
Type	ULI OF	The same of the sa	MacAlala Halon S	eale WPk#W		herita in the state of	
198   20.86-00.99   198-1918-1980-Self   286-1977   198-100/P   27-86-00.498   198-1988-1980-Self   198-1988-1980-Self   198-1988-1980-Self   198-1988-1980-Self   198-1988-1980-Self   198-1988-1988-1988-1988-1988-1988-1988-							
1987   1988-2004	Туре	OPTI-Part #			स्टिन स्ट	OEM #	Price
100   100			and her all Silver and	2	والمتعورة المحكولات أمرتني المسالي	\$ 3-412 743 	2 2 2 E F
Deckman   14/114M,   16,   126		A 150 (1915)					
Beckman   14/114M,   16,   126	11.		- Company of the Comp		The second secon	741-771	* * * * * * * * * * * * * * * * * * *
Beckman   14/114M,   16,   126           Type         OPTI-Part #   Description         OEM #   Price           Type:   Price	ACCOUNT OF THE PARTY OF THE PAR	24-51-51-51-51-51-51-51-51-51-51-51-51-51-	A STATE OF THE STA	TEAL PLACES	To a moderate of the contract		
Type         OPTI-Part #         Description         OEM #         Price           715.1072         92.56.00.196         ITEMPTED Pictor Scale         1.21027         1.21027           735.1072         170.56.00.297         \$10.67.107.008         \$2.1027         1.21027			a different and a market and a second second	3. C. marine Julie 1964 1964 1964 1964 1964 1964 1964 1964	أأتمكم المربكة بالمحاجب		المستند ي
792-0						OFM "	Duine
THE C 25 Sec. 25 Temperatures Sec. 3 25 1000.				S. 252		OEM#	Price
THE 25 ES 00:193 IN EXPERIENCES Seale 24.10027 THE 10/19 12/25/0:457 INCOMPRESENTS Seal 10/1931	Gis and Sign		ನ ಕರ್ಮಕ್ಷ ಚಲ್ಲಿಯಾಗಿಸಿಕೆಗಳು	and a second	JE na na natawa ana na na na natawa ana na		lik og værike
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	VI BUSES					2Z 1027/	
· 建铁金色 (1) - 医中央性 (2) - 医自动性 等的 (2) - 1 - 1 - 1 - 1 - 1 - 1 - 1 - 1 - 1 -	of Ballofek	.,, Discoven		teid (O/GK)			<b>建一直,196</b> 年1年
	建落。		क्षानीतः स्था	and and a second of the second		Phylips 1	

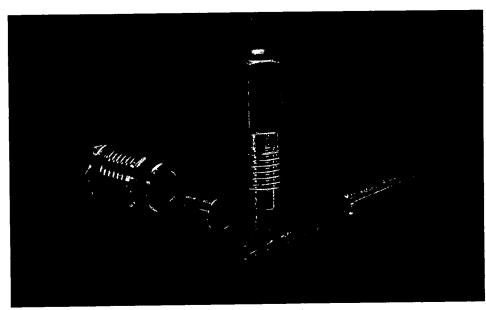
HPLC First Aid Kits<sup>®</sup> are equipped with a complete set of precision components for your Beckman/Altex pump, giving you rapid access to the parts you need to keep your system running. Fittings Kits contain a useful selection of fittings, unions and plugs (see pages 46-47). Replacement lamps for your UV detector are guaranteed to meet or exceed OEM specifications.

Туре	OPTI-Part #	Description					OEM#		Price
		HPLC First Aid K							1964
Ist AID KIT	≨ ≨22-08-0047.I <i>≸</i>	HPLC First Aid K	ut. Beck	man 110	A/I JOB	000			
ist AID KIT	<b>\$</b> 422-08-00472	A HPLC First Aid K	ic Beck	man I (2)	LI2M		<b>TAX DES</b>		
		HPLC First Aid K							<b>*</b>
FIT KIT	22-08-00469	Fittings Kit (Beck	man Inj	ection Va	ve)		) - Waling		
FIT KIT	22-08-00432	Fittings Kit (Rhec	odyne Ir	njection V	alve)	a j			
LAMP STA	22-32-01295	Lamp, M-163 and	M-166	Detecto	<b>5</b> 7 87 87 83		239372	i, ali	No.

**OPTIMIZE TECHNOLOGIES** 



# BIO-RAD

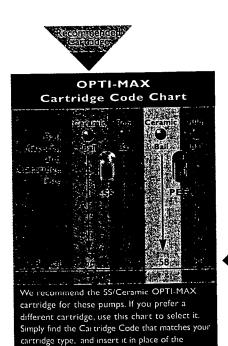


OPTI-MAX® Cartridge Check Valve System and Piston for Bio-Rad

For maximum performance and proven reliability, choose OPTI-MAX Cartridge Check Valves for your Bio-Rad HPLC system. Universal OPTI-MAX cartridges function as both inlet and outlet check valves, and fit multiple pump models (and brands) using custom-designed housings.

Replacing check valves is a snap — just remove the housing, tap out the old cartridge and put in a new one. Innovative Free-Turn™ housings let you switch cartridges without removing your connecting tubing.

OPTI-MAX cartridges are available in either stainless steel or PEEK, loaded with ceramic or ruby/sapphire matched ball and seat sets. Select the cartridge you require using the chart below. See page 41 for more information.



CC in the OPTI-MAX part number to the right.

See page 41 for more information.

# OPTI-MAX® Cartridge Check Valves Bio-Rad 1330, 1350 → FREE-TURN™ Type OPTI-Part # Description OEM # Price INLET 23 00546 OPTI-MAX Inlet Housing & Cartridge | 25-0306 | OUTLET 23 00551 OPTI-MAX Outlet Housing & Cartridge | 125-0307 | CARTRIDGE 10 00551 OPTI-MAX Replacement Cartridges, 1/8" Ball, 2/Pk number from this chart to select the cartridge type you need.

# BIO-RAD

For those who prefer purchasing standard check valve assemblies or repairing check valves with rebuild kits, we offer these precision-machined replacement parts, guaranteed to meet or exceed OEM specifications.

#### Standard Check Valves

#### Bio-Rad 1330, 1350

Туре	OPTI-Part #	Description	OEM #	Price
INCEL	23 28 00558	ellested inlets ex a beginning with	125-0306	<b>混选股份</b>
(OUTLET)	29 29 38 00549 (5	Alested Outlet	<b>持续的数据</b>	
REBUILD	23-38-00545	Rebuild Kit (Rebuilds 2)		精神技术



Replacement seals and pistons from Optimize offer superior performance and reliability, and are designed to meet or exceed the specifications of their OEM counterparts. For more information on selecting the best seal for your application, please refer to page 42.

#### Seals and Pistons

#### Bio-Rad 1330, 1350, 1350T, 2700

Туре	OPTI-Part #	Description	OEM #	Price
(C) 图 (16)	在17年1年中中	्राचीत्रात्राच्याकृत्ये दिवस्यात्रात्रात्रात्रात्रात्रात्रात्रात्रा	40.00	
Sections.	1. Spring (1963)	्रेट के प्रोहर्ट हैं के कि के कि के कि	4	
HBP 2	( PE-80-100F1)	inistrial property	2.725-0000	
TEB 10/PK	28436-00582	ATTEMPTED PLACES CONTROL OF THE SECOND		
(Trigitaline)	1. 1821	final resident for	e inte	
PISTON	25/34-00510	and a see a (initial problem (and a see a c	197, 1925, 0304	



Don't let unexpected pump malfunctions catch you by surprise! Optimize offers HPLC First Aid Kits<sup>®</sup> equipped with a complete set of precision components for your Bio-Rad pump, giving you rapid access to the parts you need to keep your system running. We also offer Fittings Kits which contain a useful selection of fittings, unions and plugs, value-priced and specifically tailored to your HPLC pump. See pages 46-47 for more information about accessory kits from Optimize.

#### Accessory Kits

#### Bio-Rad 1330, 1350

Туре	OPTI-Part #	Description	Price
fst AID K	IT 🖫 23-08-00526 🤅	HPLC First Aid Kit	
FIT KIT	23-08-00432	Fittings Kit	

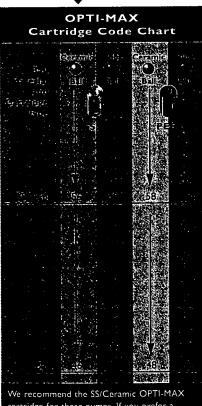
# **BISCHOFF**

For maximum performance and proven reliability, choose OPTI-MAX® Cartridge Check Valves for your Bischoff HPLC system. Universal OPTI-MAX cartridges function as both inlet and outlet check valves, and fit multiple pump models (and brands) using custom-designed housings.

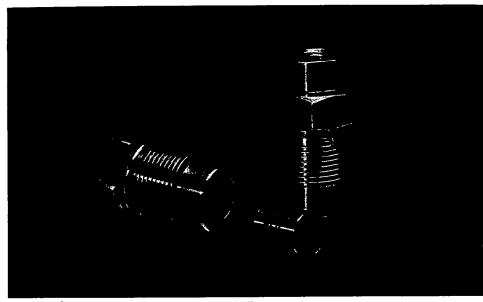
Replacing check valves is a snap — just remove the housing, tap out the old cartridge and put in a new one. Innovative Free-Turn housings let you switch cartridges without removing your connecting tubing.

OPTI-MAX cartridges are available in either stainless steel or PEEK, loaded with ceramic or ruby/sapphire matched ball and seat sets. Select the cartridge you require using the chart below. See pg. 41 for more information.





We recommend the SS/Ceramic OPTI-MAX cartridge for these pumps. If you prefer a different cartridge, use this chart to select it. Simply find the Cartridge Code that matches your cartridge type, and insert it in place of the CC in the OPTI-MAX part number to the right. See page 41 for more information.



OPTI-MAX® Cartridge Check Valve System for Bischoff

#### OPTI-MAX® Cartridge Check Valves

Bischoff	2200, Anspec	SMYUY, Alcott Micromeritics 100	FREE-TURN™	
Туре	OPTI-Part #	Description	OEM#	Price
INLET	24 200576	OPTI-MAX Inlet Housing & Cartridge	2200-0220	
OUTLET	24 300581	OPTI-MAX Outlet Housing & Cartridge it	2200-0230	
CARTRIDO	SE - 10 - 02004	OPTI-MAX Replacement Cartridges, 1/87. E	sall, 2/Pk	

#### All Above Pump Models, Microbore Type FREE-TURN™

number from this chart to select the cartridge type you need.

туре	OF 11-Part #	Description	OLI I#	Trice
INLET	24 600585	OPTI-MAX Inlet Housing & Cartridge of	2200-0120	
OUTLET.	24(36,00589	OPTI-MAX Outlet Housing & Cartridge	2200-0130	
CARTRIDO	GE 10404-02004	OPTI-MAX Replacement Cartridges, I/	6" Ball, 2/Pk	
्रीसम्बद्धः है	numbe	from this chart to select the cartridge ty	pe you need.	

# BINCHO

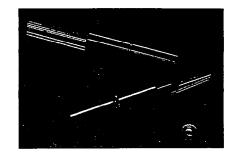
# **BISCHOFF**

Replacement seals and pistons from Optimize offer superior performance and reliability, and are designed to meet or exceed the specifications of their OEM counterparts. For more information on selecting the best seal for your application, please refer to page 42.

#### Seals and Pistons

#### Bischoff 2200, Anspec SM909, Alcott Micromeritics 760

Туре	OPT!-Part #	Description	OEM#	Price
gentalizat."	16-14-1	प्राप्त हैं हैं। अभागक के के अधिकार किया	45.5215	
[8] Ja.	Markat yes	Strains B. Was and the other		
113547., ., .,	¥\$60,000°	্যান নিস্পান নামত প্রভা	* \$\text{\$\tex{\$\text{\$\exitin}\$\$\$\text{\$\exititt{\$\text{\$\text{\$\text{\$\text{\$\text{\$\text{\$\text{\$\text{\$\texititt{\$\text{\$\text{\$\text{\$\texititt{\$\text{\$\texititt{\$\te	
NABAIONES :	7 <u>% = 7</u> 6-104 - 10% -	THE PROPERTY OF THE PROPERTY O		
	gelegyések kégés,	िल्हा अमानामा क्षेत्र	and the state of	
431510Ni	74,441,400,000/	্ষিত্র	- 2000400410	



#### All Above Pump Models, Microbore Type

Туре	OPTI-Part #	Description	OEM#	Price
Chall .	्रीहरू सम्बद्ध	The Assert Market See	And the	
8.3 JF.	and the state of	ARTHUR DE C. C. ARTHUR SAN THE	1	ار دهمستاریش
OBC .	72/62/3-(00)67/\$	्रहिन्छन् <b>या वे</b> ड शिक्षकार प्रदेश	20100e0119	
ATTES TO/FREE	74 F03-00 EVS	THE CONTEST SEED OF THE PROPERTY.		
***************************************	W. State Soften	Ren Gringhan Berge	12180-1219	الم السائد السالا
RISTION	24kzKH00F094	্রনিম্বত্যু	× 220000 (0	

Don't let unexpected pump malfunctions catch you by surprise! Optimize offers HPLC First Aid Kits<sup>®</sup> equipped with a complete set of precision components for your Bischoff pump, giving you rapid access to the parts you need to keep your system running. We also offer Fittings Kits which contain a useful selection of fittings, unions and plugs, value-priced and specifically tailored to your HPLC pump. See pages 46-47 for more information about accessory kits from Optimize.

#### Accessory Kits

#### Analytical Bischoff 2200, Anspec SM909, Alcott Micromeritics 760

Туре	OPTI-Part #	Description	Price
Ist AID K	IT.: 24-08-00557	CHPLC: First Ald Kiew	
FIT KIT	24-08-00432	Fittings Kit	

#### All Above Pump Models, Microbore Type

Туре	OPTI-Part #	Description	Price
ist AID KI	T 🖟 24-08-00558 🗱	HPLC First Aid Kit 1888	

# DIONEX

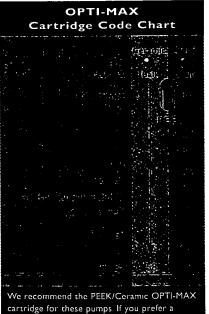


OPTI-MAX® Cartridge Check Valve System and Piston for Dionex

For maximum performance and proven reliability, choose OPTI-MAX Cartridge Check Valves for your Dionex HPLC system. Universal OPTI-MAX cartridges function as both inlet and outlet check valves, and fit multiple pump models (and brands) using custom-designed housings.

Replacing check valves is a snap — just remove the housing, tap out the old cartridge and put in a new one. OPTI-MAX cartridges are available in PEEK, loaded with ceramic or ruby/sapphire matched ball and seat sets. Select the cartridge you require using the chart below. See page 41 for more information.

# Recognistics:



different cartridge, use this chart to select it. Simply find the Cartridge Code that matches your cartridge type, and insert it in place of the CC in the OPTI-MAX part number to the right.

e page 41 for more information

#### OPTI-MAX® Cartridge Check Valves

#### DQP, GPM-I, DRP, GPM-2, DXP, AGP (Analytical), 2000, 4000

Type	OPTI-Part #	Description	OEM #	Price
INLET		OPTI-MAX Inlet Housing & Cartridge	38273	
ÖÜTET		OPTI-MAX Outlet Housing & Cartridg	e // 38272	1977 AND 1971 1987 AND 1987 AN
(Old Style		DOP GPM-I DRP	e 42761	
(New Styl		GPM-2, DXP, AGP (Analytical), 2000, 4		
SCARIRID Francisco	GE#10.5 02004	OPTI-MAX Replacement Cartridges, I	o Dair, Zirk	epit in the

number from this chart to select the cartridge type you need.

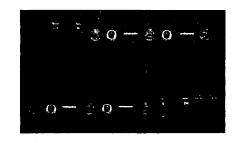
# DIONEX

For those who prefer purchasing standard check valve assemblies or repairing check valves with rebuild kits, we offer these precision-machined replacement parts, guaranteed to meet or exceed OEM specifications.

#### Standard Check Valves

DQP, GPM-1, DRP, GPM-2, DXP, AGP (Analytical), 2000, 4000

Туре	OPTI-Part #	Description	OEM #	Price
INLEG	245E-0030F	STEEREN FOR GRANTHOUR TO SEE STATE	mara sil	
		GREENDXRAGE (Analysics)), 2000;4000;	38273	
OUTLET!	25-38-00607			ities.
	Spokensky E	A DOS GIANT DIAS	38272	College 6
OUTLET	\$45-38-006(0 i	Inglicondulting Juic		
		GRMP25DXRAGR(Aparyuga))32000240004	4276	
REBUILD	25-38-00609	Rebuild Kit (Rebuilds 2), DOP GPM-1, DRP	ay dire	
	和1972年中国共1985年	GPM-2, DXP, AGP (Analytical), 2000, 4000	4的,这是4年25年	<b>和格益數別在3月1日</b>

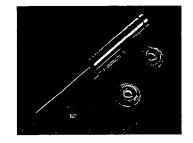


Replacement seals and pistons from Optimize offer superior performance and reliability, and are designed to meet or exceed the specifications of their OEM counterparts. For more information on selecting the best seal for your application, please refer to page 42.

#### Pistons and Seals

GP40/IP20 (Analytical), DQP, GPM-1, DRP, GPM-2, DXP, AGP (Analytical), 2000, 4000

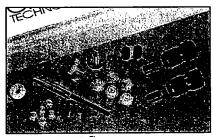
Туре	OPTI-Part #	Description	OEM#	Price
為好物訓養	Shirt Charle	्रिकेन केला अधिकारण प्रकारण पदेन तमालाई है। ये श्रिकेट	4.01. ES.	
ES Maria	Carlo, Mila	अर्थ । जेवल वाह्य कर्ता के इस अर्थ हो। वहांसक कर बहुँ कर्ती एक स		
55AL	Be Probes.	ुर्ग । ४००५ मुद्द अवेक्शा भवेत (। बह्म व्यक्ति । वस्तु प्रति । वस्तु । वस्तु । वस्तु । वस्तु ।	- Mar. 1. 1. 1. 1. 1. 1. 1. 1. 1. 1. 1. 1. 1.	4012
SEALHOPA	\$26±66.000000	्राभी हे 📆 १५ में हैं भी कि स्तर्भ की स्तर्भ के स्तर्भ के स्तर्भ की स्तर्भ की स्तर्भ की स्तर्भ की स्तर्भ की स	体验的	A. Nation
	Talia kohut	TOTAL CONTRACTOR OF THE STATE O		
		Terra Grégor (1917) en 18 de 19		The latter of the late
PISTON	-555-11:005/6†	ात्रकृष्टि साम्रिकियाः		
		TELEVINATION OF THE PROPERTY O	E36804	



Don't let unexpected pump malfunctions catch you by surprise! Optimize offers HPLC First Aid Kits<sup>™</sup> equipped with a complete set of precision components for your Dionex pump, giving you rapid access to the parts you need to keep your system running. We also offer Fittings Kits which contain a useful selection of fittings, unions and plugs, value-priced and specifically tailored to your HPLC pump. See pages 46-47 for more information about accessory kits from Optimize.

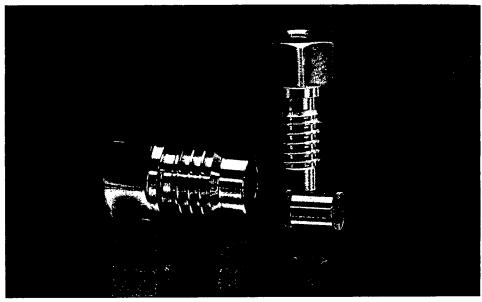
_			
Acc	cesso	rv	Kits

Туре	OPTI-Part #	Description	Price
Ist AID K	IT : 25-08-00594 §	"HPLC First Aid Kit, DOP GPM-1, DRP	100
ist AID KI	T 25-08-00595	HPLC First Aid Kit, GPM-2, DXP, AGP (Analytical), 2000, 4000	
FIT KIT	25-08-00593	Fittings Kit, DQP, GPM-1, DRP, GPM-2, DXP, AGP (Analytical), 2000, 40	00



HPLC First Aid Kit

# GILSON/RAININ



OPTI-MAX® Cartridge Check Valve System for Gilson/Rainin

For maximum performance and proven reliability, choose OPTI-MAX Cartridge Check Valves for your Gilson/Rainin HPLC system. Universal OPTI-MAX cartridges function as both inlet and outlet check valves, and fit multiple pump models (and brands) using custom-designed housings.

Replacing check valves is a snap — just remove the housing, tap out the old cartridge and put in a new one. OPTI-MAX cartridges are available in either stainless steel or PEEK, loaded with ceramic or ruby/sapphire matched ball and seat sets. Select the cartridge you require using the chart below. See page 41 for more information.

#### OPTI-MAX® Cartridge Check Valves

5, 10 & 25 mL S/SC Heads [Gilson, Rainin HP, HPX, HPXL, SD 200/300]

Туре	OPTI-Part #	Description	OEM #	Price
INLET	26 00638	OPTI-MAX Inlet Housing & C	Glison: 3645242 Legis artridge Rainin: E50 (31 & R007)	01616
OUTLET	Twitte-statement Thirtige-state	THE PROPERTY OF THE PERSON OF	Gartridge Rainin E50121 & R0071	01617 đ / j
CARTRID	GE :: 10 (Bg/02004	©PTI-MAX Replacement Car	tridges = I/8" Ball 2/Pk = 5 35	

number from this chart to select the cartridge type you need.



**OPTI-MAX** Cartridge Code Char

cartridge for these pumps. If you prefer a different cartridge, use this chart to select it. Simply find the Cartridge Code that matches your cartridge type, and insert it in place of the CC in the OPTI-MAX part number to the right See page 41 for more information.

# GILSON/RAININ

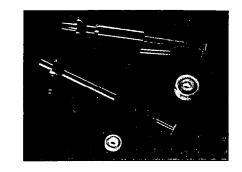
Gilson/Rainin pumps manufactured before 1985 (\$Type) bear either an "\$" or no marking on the pump head. Pumps manufactured subsequent to 1985 (\$C Type) are identified with an "\$C" on the pump head.

Replacement seals and pistons from Optimize offer superior performance and reliability, and are designed to meet or exceed the specifications of their OEM counterparts. For more information on selecting the best seal for your application, please refer to page 42.

#### Seals and Pistons

#### 10 mL S/SC Heads [Gilson, Rainin HP, HPX, HPXL, SD 200/300]





#### 5 mL S/SC Heads [Gilson, Rainin HP, HPX, HPXL, SD 200/300]

Туре	OPTI-Part #	Description	OEM#	Price
Be lever	g. File-Buller	्राहित्रीकारणाः अस्ति । स्व हिं सहाताः ब्रह्मः	Superior Control	
	ar almeters.	क्षेत्रपरिकारिको स्थापित विश्वास्ति । स्थापित स्थापित ।		<u> </u>
MEDA .	1.726-26-006-76-	্যুম্প্রার্থনার করে।	(e)  Fe  2   4   6   4   5   5   5   5   5   5   5	
TOPA OPEN	245 at 6 @968 at	his and the second of the seco		
विश्व दिल	A 1 9/80	्राष्ट्रकार के के ब्राह्मण्डेली दोला है।		

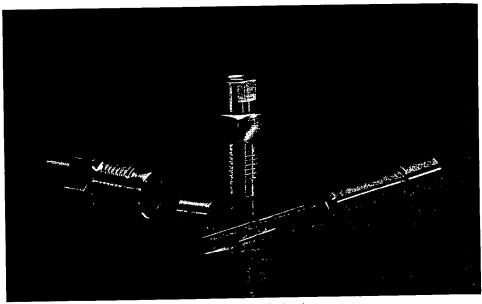
Don't let unexpected pump malfunctions catch you by surprise! Optimize offers HPLC First Aid Kits™ equipped with a complete set of precision components for your Gilson/Rainin pump, giving you rapid access to the parts you need to keep your system running. We also offer Fittings Kits which contain a useful selection of fittings, unions and plugs, value-priced and specifically tailored to your HPLC pump. See pages 46-47 for more information about accessory kits from Optimize.

#### Accessory Kits

#### 10 mL & 5 mL SC Heads [Gilson, Rainin HP, HPX, HPXL, SD 200/300]

Туре	OPTI-Part #	Description	Price
Ist AID K	IT # 26-08-00622	HPLG: First Aid. Kit. 10-imit SC Type: Head	District States
lst AID K	IT № 26-08-00623	HPLC First Aid Kit 5 mil SC Type Head	HEREN ESTE
FIT KIT	26-08-00621	Fittings Kit, For Pumps with 5/10 mL SC Heads	
		(Rheodyne Injection Valve)	" Charles Agents

# **GYNKOTEK**

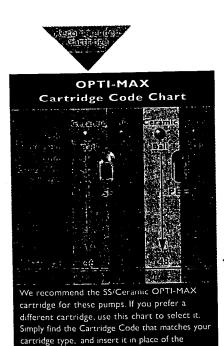


OPTI-MAX® Cartridge Check Valve System and Piston for Gynkotek

For maximum performance and proven reliability, choose OPTI-MAX Cartridge Check Valves for your Gynkotek HPLC system. Universal OPTI-MAX cartridges function as both inlet and outlet check valves, and fit multiple pump models (and brands) using custom-designed housings.

Replacing check valves is a snap — just remove the housing, tap out the old cartridge and put in a new one. Innovative Free-Turn™ housings let you switch cartridges without removing your connecting tubing.

OPTI-MAX cartridges are available in either stainless steel or PEEK, loaded with ceramic or ruby/sapphire matched ball and seat sets. Select the cartridge you require using the chart below. See page 41 for more information.



CC in the OPTI-MAX part number to the right

See page 41 for more information.

# OPTI-MAX® Cartridge Check Valves Gynkotek 300, M480, Analytical and Microbore → FREE-TURN™ Type OPTI-Part # Description OEM # Price INLET: 44 000451 OPTI-MAX Inlet Housing & Cartridge 5005-3200 OUTLEFT: 44 100460 OPTI-MAX Outlet Housing & Cartridge 5005-3100 CARTRIDGE 10 02004 OPTI-MAX Replacement Cartridges, 1/16", Ball, 2/Pk number from this chart to select the cartridge type you need.

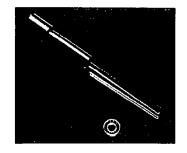
# **GYNKOTEK**

Replacement seals and pistons from Optimize offer superior performance and reliability, and are designed to meet or exceed the specifications of their OEM counterparts. For more information on selecting the best seal for your application, please refer to page 42.

#### Seals and Pistons

#### Gynkotek 300, M480, Analytical Only





Don't let unexpected pump malfunctions catch you by surprise! Optimize offers HPLC First Aid Kits<sup>™</sup> equipped with a complete set of precision components for your Gynkotek pump, giving you rapid access to the parts you need to keep your system running. We also offer Fittings Kits which contain a useful selection of fittings, unions and plugs, value-priced and specifically tailored to your HPLC pump. See pages 46-47 for more information about accessory kits from Optimize.

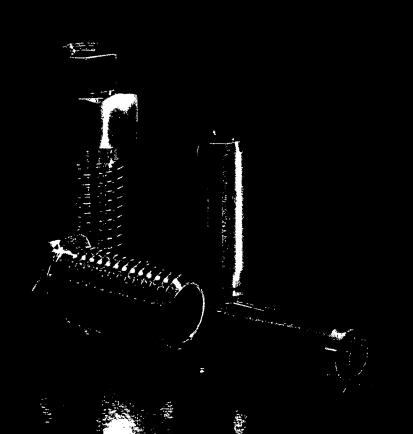
#### Accessory Kits

#### Gynkotek 300, M480, Analytical Only

Туре	OPTI-Part #	Description	Price
i st AID KI	T : 44-08-00433	HPLC First Aid Kit	
FIT KIT	44-08-00432	Fittings Kit, All Gynkotek	



OPTI-MAX® Cartridge Check Valve System for Hewlett-Packard 1050



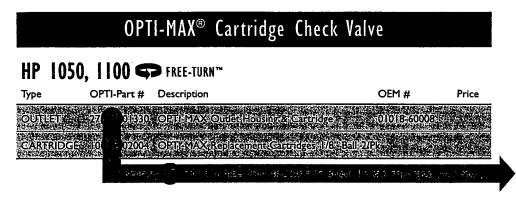
Replacement Cartridge Check Valve System for Hewlett-Packard 1090

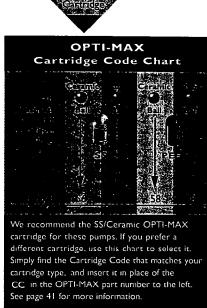
# **HEWLETT-PACKARD**

For maximum performance and proven reliability, choose OPTI-MAX® Cartridge Check Valves for your Hewlett-Packard HPLC system. Universal OPTI-MAX cartridges fit multiple pump models (and brands) using custom-designed housings.

Replacing check valves is a snap — just remove the housing, tap out the old cartridge and put in a new one. Innovative Free-Turn™ housings let you switch cartridges without removing your connecting tubing.

OPTI-MAX cartridges come in either stainless steel (SS) or PEEK, loaded with ceramic or ruby/sapphire matched ball and seat sets. Select the cartridge you require using the chart below. See page 41 for more information.





For the HP-1090, we offer a cartridge-based check valve system designed as a direct replacement for OEM cartridge check valves, and guaranteed to meet or exceed OEM specifications.

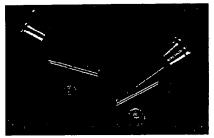
#### Standard Cartridge Check Valves

#### HP 1090

Туре	OPTI-Part #	Description	OEM#	Price
EINLET	27/318-00680	ଜ୍ୟତ୍ୟ ନାର୍ଥ୍ୟ ପ୍ରା		
OUT LET	1. 24420.00694	atipologiamica	94643 Chingo - 70.0000 [10.7004510];	
CARTRID	GE 97/218:00 <i>6</i> 7/2:	Replacement © in	trige 200 et explorition	(i+j)+j+1

# **HEWLETT-PACKARD**

Replacement seals and plungers from Optimize offer superior performance and reliability, and are designed to meet or exceed the specifications of their OEM counterparts. For more information on selecting the best seal for your application, please refer to page 42.



Seals and Plungers for HP 1050/1100, and HP 1090

# Seals and Plungers HP 1050, 1100 Type OPTI-Part # Description OEM # Price 1050 1

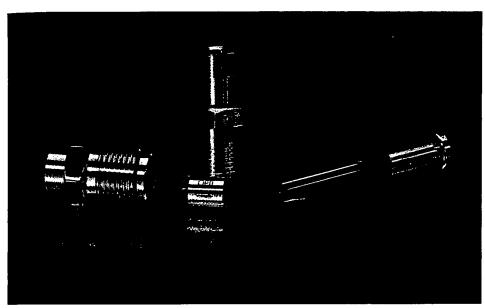
#### **HP 1090**

Туре	OPTI-Part #	Description	OEM #	Price
Since Single			7.66 ( 34.58) ·	
	10.00		3.75)	
	verialitis.	भारते अञ्चलके स्थापके स्थापके ।		
ETP NO/PRO	: 10h 21:4008:61	Herendelings den der		
thus, etg.	graph grayers.	Breit Greet	700000	

Don't let unexpected pump malfunctions catch you by surprise! Optimize offers HPLC First Aid Kits<sup>™</sup> equipped with a complete set of precision components for your Hewlett-Packard pump, giving you rapid access to the parts you need to keep your system running. We also offer Fittings Kits which contain a useful selection of fittings, unions and plugs, value-priced and specifically tailored to your HPLC pump. See pages 46-47 for more information about accessory kits from Optimize.

	Accessory Kits			
Туре	OPTI-Part #	Description	Price	
JSPAID KI	AT : 27/40840[447] -	HREGISTATE STORY OF THE STREET		
stst AID, KI	J-\$6-27-08-0065/\$	HRICHBIAIGIAFAOSO		
FIT KIT	27-08-00656	Fittings Kit, HP 1050, 1090, 1100		

# HITACHI



OPTI-MAX® Cartridge Check Valve System and Piston for Hitachi 655, L-6000, L-6200, L-6200A

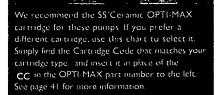
For maximum performance and proven reliability, choose OPTI-MAX® Cartridge Check Valves for your Hitachi HPLC system. Universal OPTI-MAX cartridges function as both inlet and outlet check valves, and fit multiple pump models (and brands) using custom-designed housings.

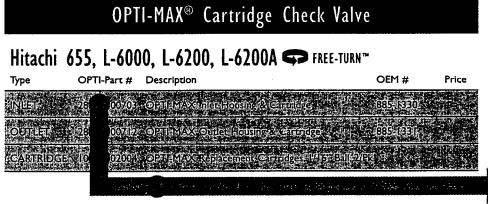
Replacing check valves is a snap — just remove the housing, tap out the old cartridge and put in a new one. Innovative Free-Turn™ housings let you switch cartridges without removing your connecting tubing.

OPTI-MAX cartridges are available in either stainless steel or PEEK, loaded with ceramic or ruby/sapphire matched ball and seat sets. Select the cartridge you require using the chart below. See pg. 41 for more information.

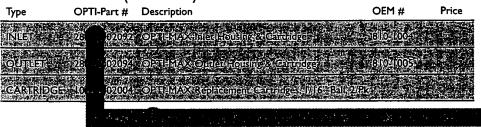
> OPTI-MAX Cartridge Code Chart



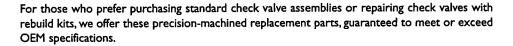


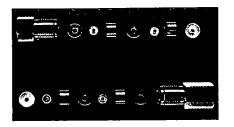


#### Hitachi L-7100 (LaChrom®)



# HITACHI



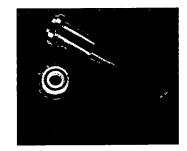


#### Standard Check Valves

#### Hitachi 655, L-6000, L-6200, L-6200A

Туре	OPTI-Part #	Description	OEM #	Price
		Tese White Tests Service Tests		
OUTILES:	28588500512°	rence Order	(2) 0 2 (885-33) P	
REBUILD	28-38-0070	Rebuild Kit (Rebuilds 2)	HAT HALL STREET	MANUAL PRINCIP

Replacement seals and pistons from Optimize offer superior performance and reliability, and are designed to meet or exceed the specifications of their OEM counterparts. For more information on selecting the best seal for your application, please refer to page 42.



#### Seals and Pistons

#### Hitachi 655, L-6000, L-6200, L-6200A, L-7100 (LaChrom®)

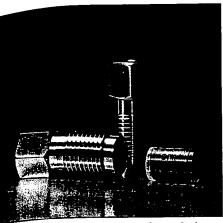
Туре	OPTI-Part #	Description	OEM#	Price
STREET,	and the state of the first terms are		1. 15-25	
E 2 1975	The Granding of	and the first state of the stat		
<b>FEEREN</b>	//836-00688 <sub>18</sub>	भिन्नान् विद्वारिकारिकाः	. 358-930	
1004	7(0.80£000405)**	निर्वापनाम्बर्धनान्। एका, विकि	7.7 . AZ.	
	# 12.2 m 19.00 .	ं, कृतिहरू सुंद्राद्र चारसकार घटना का तरकार है। इस तीर विवास है .	·	د د د دوسیست در دوستان در دوستان در دوستان دوست
	1,526, 100	The first thing some in the sure of graph		
PISTON	28-34-0068574	Sapphic Pison	5. <b>(820) <del>(</del>918)</b> 5.	

Don't let unexpected pump malfunctions catch you by surprise! Optimize offers HPLC First Aid Kits<sup>16</sup> equipped with a complete set of precision components for your Hitachi pump, giving you rapid access to the parts you need to keep your system running. We also offer Fittings Kits which contain a useful selection of fittings, unions and plugs, value-priced and specifically tailored to your HPLC pump. See pages 46-47 for more information about accessory kits from Optimize.

#### Accessory Kits

#### Hitachi 655, L-6000, L-6200, L-6200A

Туре	OPTI-Part #	Description	Price
Ist AID K	IT, \$128-08-00684	HPLC First Aid Kir.	
FIT KIT	28-08-00683	Fittings Kit	



OPTI-MAX® Cartridge Check Valve System for Isco

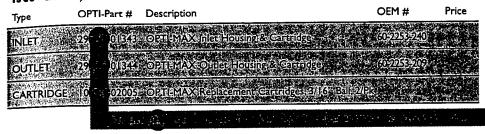
For maximum performance and proven reliability, choose OPTI-MAX® Cartridge Check Valves for your Isco HPLC system. Universal OPTI-MAX cartridges function as both inlet and outlet check valves, and fit multiple pump models (and brands) using custom-designed housings.

Replacing check valves is a snap — just remove the housing, tap out the old cartridge and put in a new one.

OPTI-MAX cartridges are available in either stainless steel or PEEK, loaded with ceramic or ruby/sapphire matched ball and seat sets. Select the cartridge you require using the chart below. See page 41 for more information.

#### OPTI-MAX® Cartridge Check Valve

Isco 2300, 2350



OPTI-MAX
Cartridge Code Chart

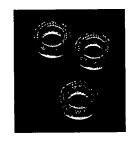
We recommend the SS/Ceramic OPTI-MAX cartridge for these pumps. If you prefer a different cartridge, use this chart to select it. Simply find the Cartridge Code that matches your cartridge type, and insert it in place of the CC in the OPTI-MAX part number to the left. See page 41 for more information.

Replacement seals from Optimize offer superior performance and reliability, and are designed to meet or exceed the specifications of their OEM counterparts. For more information on selecting the best seal for your application, please refer to page 42.

#### Piston Seals

Isco 2300, 2350

Туре	OPTI-Part #	Description	OEM #	Price
07-83.10	( A & & 36)	े वेल्लाक्ष्यक्र क्षिणकरूप राज्य । १५ जारहार	199 g m 27 m 3	المن المنظمين. المن المحاسمين.
ভূতি গুলাহ	્ર જુ <sup>મ</sup> ાં ડીઆવ્યું ધાર્જ	कृतिस्थान्य । वेनावे १००० वस्त्रा १८ वर्षा १८ वर्षा		
тв™ 🕬	29:36:00/23	न १८/३ <b>१</b> वन् श्रेस्टाकेट्स । क्षीनाक	708E0250E01	
ITB, IO/PK	19-16-00 72 PM	- भूतेओ प्रतिके के तरा काल्या कर होती है के कि		
35 24 P	i ikusawa iki	्रिक्त के के के कि कि कि के कि के कि	10,51	ili. Geografia (m. 1815)
es on:	V 29.044 '355	्रिको निर्मेश्वर अपनितन में केन्द्रमा केन्द्रा अन्य अमर्थनातु से	orp.	
ITB™	29-36-01303	i migrafiationStalegeoreae	200810F0-12	
ITB, IO/Pk	29-36-01304	Mark and the state of the second state of the		4-11-2014

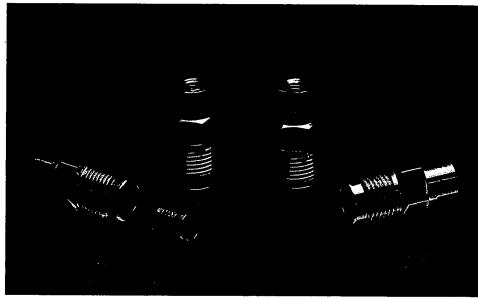


# JASCO

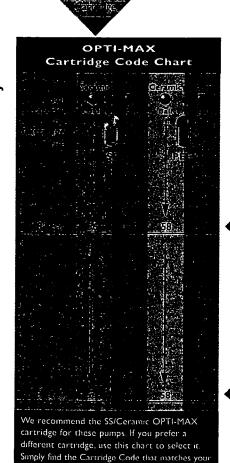
For maximum performance and proven reliability, choose OPTI-MAX® Cartridge CheckValves for your Jasco HPLC system. Universal OPTI-MAX cartridges function as both inlet and outlet check valves, and fit multiple pump models (and brands) using custom-designed housings.

Replacing check valves is a snap — just remove the housing, tap out the old cartridge and put in a new one. Innovative Free-Turn\* housings let you switch cartridges without removing your connecting tubing.

OPTI-MAX cartridges are available in either stainless steel or PEEK, loaded with ceramic or ruby/sapphire matched ball and seat sets. Select the cartridge you require using the chart below. See pg. 41 for more information.



OPTI-MAX® Cartridge Check Valve System for Jasco BIP-1 (left) and Jasco 880/980 Series (right)



# OPTI-MAX® Cartridge Check Valves Jasco BIP-I → FREE-TURN™ Type OPTI-Part # Description OEM # Price INLET 42 01038 OPTI-MAX\*Inlet Housing & Cartridge # 6260-H101A OUTLET # 42 01043 OPTI-MAX Outlet Housing & Cartridge # 4260-H107A CARTRIDGE 10 0 02004 OPTI-MAX Replacement Cartridge type you need. Jasco 880/980 Series → FREE-TURN™ Type OPTI-Part # Description OEM # Price INLET # 42 01544 OPTI-MAX Inlet Housing & Cartridge # 6560-405A OUTLET # 42 01544 OPTI-MAX Outlet Housing & Cartridge # 6560-405A OUTLET # 42 01544 OPTI-MAX Outlet Housing & Cartridge # 6560-405A OUTLET # 42 01544 OPTI-MAX Outlet Housing & Cartridge # 6560-405A OUTLET # 42 01544 OPTI-MAX Outlet Housing & Cartridge # 6560-405A OUTLET # 42 01545 OPTI-MAX Outlet Housing & Cartridge # 6560-405A OUTLET # 42 01545 OPTI-MAX Outlet Housing & Cartridge # 6560-405A OUTLET # 42 01545 OPTI-MAX Outlet Housing & Cartridge # 6560-405A OUTLET # 42 01545 OPTI-MAX Outlet Housing & Cartridge # 6560-405A OUTLET # 42 01545 OPTI-MAX Outlet Housing & Cartridge # 6560-405A OUTLET # 42 01545 OPTI-MAX Outlet Housing & Cartridge # 6560-405A OUTLET # 42 01545 OPTI-MAX Outlet Housing & Cartridge # 6560-405A OUTLET # 42 01545 OPTI-MAX Outlet Housing & Cartridge # 6560-405A OUTLET # 6560-405

cartridge type, and insert it in place of the CC in the OPTI-MAX part number to the right.

See page 41 for more information.

**JASCO** 

# For those who prefer purchasing standard check valve assemblies or repairing check valves with rebuild kits, we offer these precision-machined replacement parts, guaranteed to meet or exceed OEM specifications.

#### Standard Check Valves

#### lasco BIP-I

Туре	OPTI-Part #	Description	OEM #	Price
			ANORHEO A	
<b>OUTER</b>	7288 G (	ind Ower:		
REBUILD !	42-38-01023 H	Rebuild Kit (Rebuilds 2, BIF	-l ör 880/980) 🚉 🦠 🛒 🐈 🥫	

Replacement seals and pistons from Optimize offer superior performance and reliability, and are designed to meet or exceed the specifications of their OEM counterparts. For more information on selecting the best seal for your application, please refer to page 42.

#### Seals and Pistons

#### Jasco BIP-1, 880/980 Series

Туре	OPTI-Part #	Description	OEM#	Price
SALAN SEL		्रिक्त	_ godenest. A resemble	
and the second	The said of the said	The perfect to be taken as the same parties.	4.4/2.	
	/ /25(H013/8)	्रीक्ट्रिनम्बर्गहरको <b>डि</b> कार्ट र प्रश्नान	ascontinute ( ) ascontinute (	
निंग (दिन्दर	7920401596 <sup>7</sup> 7	चित्रेशयनिस्तितस्त्रात्त्रस्ति। शिल्हाः		
RETON	。	Saming Phon	\$4,005,000,000,044,6560,000,000,000	



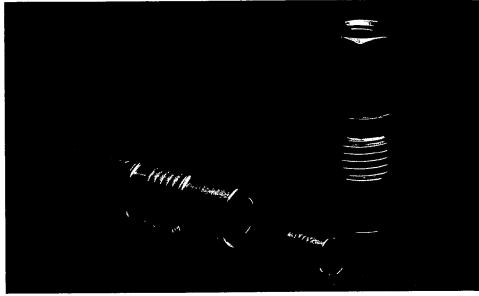
Don't let unexpected pump malfunctions catch you by surprise! Optimize offers HPLC First Aid Kits<sup>™</sup> equipped with a complete set of precision components for your Jasco pump, giving you rapid access to the parts you need to keep your system running. We also offer Fittings Kits which contain a useful selection of fittings, unions and plugs, value-priced and specifically tailored to your HPLC pump. See pages 46-47 for more information about accessory kits from Optimize.

#### Accessory Kits

#### Jasco BIP-1, 880/980 Series

Type	OPTI-Part #	Description	Price
ist AID K	T/42/08-01348-0	eHPEC/First Aid Kie BIP 188 (1994)	
Ist AID KI	T-1-42208-02047	HPLC: First Ald Kie 880/980 Series 8/1	
FIT KIT	42-08-00913	Fittings Kit (Valco Injection Valve)	
FIT KIT	42-08-00432	Fittings Kit (Rheodyne Injection Valve)	

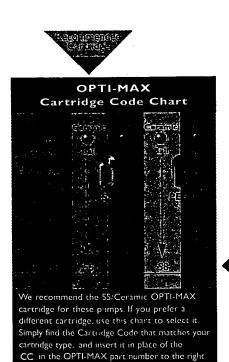
# LDC/MILTON ROY



OPTI-MAX® Cartridge Check Valve System for LDC/Milton Roy

For maximum performance and proven reliability, choose OPTI-MAX Cartridge Check Valves for your LDC/Milton Roy, Minimetric, Minipump, Constametric, and IBM LC-9660 HPLC systems. Universal OPTI-MAX cartridges function as both inlet and outlet check valves, and fit multiple pump models (and brands) using custom-designed housings.

Replacing check valves is a snap — just remove the housing, tap out the old cartridge and put in a new one. OPTI-MAX cartridges are available in either stainless steel or PEEK, loaded with ceramic or ruby/sapphire matched ball and seat sets. Select the cartridge you require using the chart below. See page 41 for more information.



#### OPTI-MAX® Cartridge Check Valves

#### LDC/Milton Roy, All Analytical

Туре	OPTI-Part #	Description	OEM#	Price
NET	¥ 3 (60 00759)	OPFI-MAX Inlet Housing & Cartridge	900947001	
OUTHERS	31) = 00764	OPTI-MAX Outlet Housing & Cartridge	900947002	thur.
CARTRID	d≡}10\ 02004	OPTI-MAX Replacement Cartridges; 1/8	" Ball, 2/Pk + Print plants	
4				

number from this chart to select the cartridge type you need.

See page 41 for more information.

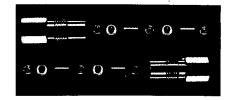
# LDC/MILTON ROY

For those who prefer purchasing standard check valve assemblies or repairing check valves with rebuild kits, we offer these precision-machined replacement parts, guaranteed to meet or exceed OEM specifications.

#### Standard Check Valves

#### LDC/Milton Roy, All Analytical

Туре	OPTI-Part #	Description		OEM#	Price
SUCTION		the second secon	hadiyayo	The state of the s	
			i ChadeVares		
REBUILD	图 31-38-00757』	Rebuild Kit (Reb	uilds () # 7 1 2 1 1 1	9005   7 🖑 🖟	####
	E\$ .9X1:009765-1.	Main Aire Estrete	াট ডিল ব্যক্তিটা ডিল 🔭 📜	11975001569776	
7417762 AS	31-24-00736	"[/]6" Nut & Fer	rule For Discharge Tube	1960066975	起的动物

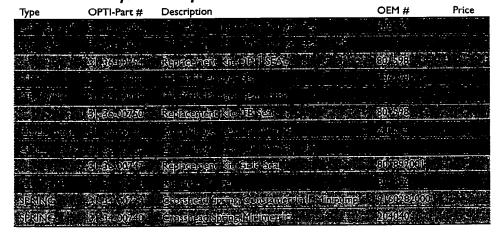


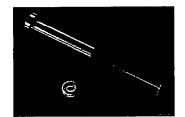


Replacement seals and plungers from Optimize offer superior performance and reliability, and are designed to meet or exceed the specifications of their OEM counterparts. For more information on selecting the best seal for your application, please refer to page 42.

#### Seals and Plungers

#### LDC/Milton Roy, All Analytical







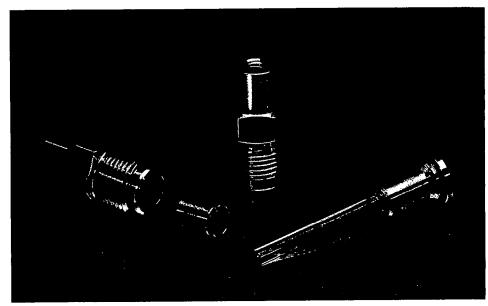
Seal Replacement Kits

Optimize offers HPLC First Aid Kits™ equipped with a complete set of precision components for your LDC/Milton Roy pump, giving you rapid access to the parts you need to keep your system running. Fittings Kits contain a useful selection of fittings, unions and plugs, value-priced and specifically tailored to your HPLC pump. See pages 46-47 for more information about these kits. Replacement lamps for your UV detector are guaranteed to meet or exceed OEM specifications.

#### Accessory Kits and Lamps

			· · · · · · · · · · · · · · · · · · ·	
Туре	OPTI-Part #	Description	OEM #	Price
Ist AID KIT	3:1-08-00734	HPEC First Aid Kit All Analytical	Pumps	
		Fittings Kit		, S
LAMP	€ 31-32-01295 y	Deuterium Lamp Spectromonito	r III & D.	
144.4		3100 & 4000 Series 🗚 👭	**************************************	

# LKB



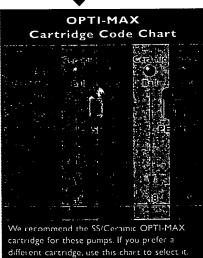
OPTI-MAX® Cartridge Check Valve System and Piston for LKB

For maximum performance and proven reliability, choose OPTI-MAX Cartridge Check Valves for your LKB HPLC system. Universal OPTI-MAX cartridges function as both inlet and outlet check valves, and fit multiple pump models (and brands) using custom-designed housings.

Replacing check valves is a snap — just remove the housing, tap out the old cartridge and put in a new one. Innovative Free-Turn™ housings let you switch cartridges without removing your connecting tubing.

OPTI-MAX cartridges are available in either stainless steel or PEEK, loaded with ceramic or ruby/sapphire matched ball and seat sets. Select the cartridge you require using the chart below. See page 41 for more information.





Simply find the Cartridge Code that matches your cartridge type, and insert it in place of the CC in the OPTI-MAX part number to the right.

See page 41 for more information.

#### OPTI-MAX® Cartridge Check Valves

#### LKB 2150, 2248 🖘 FREE-TURN™

Туре	OPTI-Part #	Description	OEM#	Price
INLET	52 00782	OPTI-MAX Inlet Housing & Cartridge	80-1035-19	140
OUTLET!	32 00787	OPTI-MAX Outlet Housing & Cartridge	80-1035-20	
GARTRID	GE 210 2004	OPTI-MAX Replacement Cartridges: 1/16" Ball	, 2/Pk	
DESIGNATION OF THE PARTY OF THE				

number from this chart to select the cartridge type you need.

둚

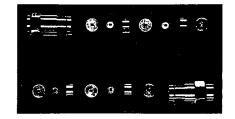
LKB

For those who prefer purchasing standard check valve assemblies or repairing check valves with rebuild kits, we offer these precision-machined replacement parts, guaranteed to meet or exceed OEM specifications.

#### Standard Check Valves

#### LKB 2150, 2248

Туре	OPTI-Part #	Description	OEM#	Price
INCER	17438500774)	- विद्याला ।	(A) 2000 2005	
OUTLET	\$ 29 EXELOTED	भृत्याले भित्रात्तर हैं।		
REBUILD	32-38-00781	Rebuild Kit (Rebuilds 2)	Andri Carre	

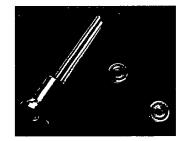


Replacement seals and pistons from Optimize offer superior performance and reliability, and are designed to meet or exceed the specifications of their OEM counterparts. For more information on selecting the best seal for your application, please refer to page 42.

#### Seals and Pistons

#### LKB 2150, 2248

Туре	OPTI-Part #	Description	OEM #	Price
april 4.6		ુર્જુ કૃતિ, તે મેન્સ ક્રિક્ટ ક્રિક્ટ	F17 (1917) 10 - 10 7 - 18 7	
B J.	क्ष हैंकरी हैंबान	्राप्ते वर्षे कृत्या प्राप्ति वर्षे विष्युक्त हैं है है	ब्रेट न प्रसंस्थान स्थापन	
TEV <b>AND</b>	3256-01503	ें हैं है कि विद्युक्त है को 17 स्वाप्त पूर्ण कि	the contract of	16
ATB) (O/A):	· Pricellea.	. The light of the control		
467	100	The state of the state of the state of	29. 12.20.42	



Don't let unexpected pump malfunctions catch you by surprise! Optimize offers HPLC First Aid Kits<sup>™</sup> equipped with a complete set of precision components for your LKB pump, giving you rapid access to the parts you need to keep your system running. We also offer Fittings Kits which contain a useful selection of fittings, unions and plugs, value-priced and specifically tailored to your HPLC pump. See pages 46-47 for more information about accessory kits from Optimize.

#### Accessory Kits

#### LKB 2150

Туре	OPTI-Part #	Description	Price
Ist AID K	FT 🚜 32-08-00770 🛪	HPLC First Ald Kit jett sage with the second of the second	
FIT KIT	32-08-00432	Fittings Kit	港湾的探索的湖。

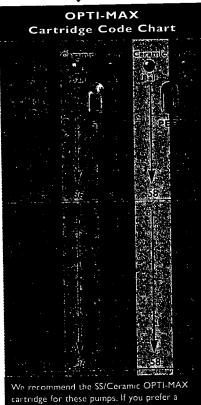
# PERKIN-ELMER

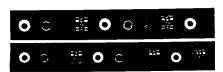
For maximum performance and proven reliability, choose OPTI-MAX® Cartridge Check Valves for your Perkin-Elmer HPLC system. Universal OPTI-MAX cartridges function as both inlet and outlet check valves, and fit multiple pump models (and brands) using custom-designed housings.

Replacing check valves is a snap — just remove the housing, tap out the old cartridge and put in a new one.

OPTI-MAX cartridges are available in either stainless steel or PEEK, loaded with ceramic or ruby/sapphire matched ball and seat sets. Select the cartridge you require using the chart below. See page 41 for more information.



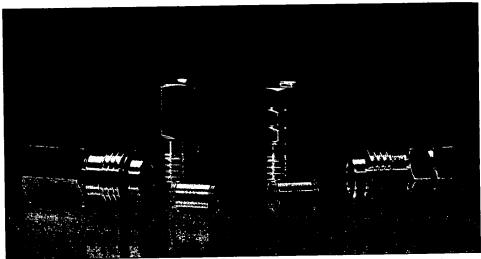




different cartridge, use this chart to select it. Simply find the Cartridge Code that matches your

cartridge type, and insert it in place of the CC in the OPTI-MAX part number to the right.

See page 41 for more information.



OPTI-MAX® Cartridge Check Valve System for Perkin-Elmer Model 250, Series 4, 200, 400, 410, 620, Integral 4000 (left) and Perkin-Elmer Series 1, 2, 3, 3B, 10 (right)

#### OPTI-MAX® Cartridge Check Valves

Series 1, 2, 3, 3B, 10

Туре	OPTI-Part #	Description	OEM#	TILLE
INEL	33 (8) 00840	OPTI-MAX inlet Housing & Carthidge	0254-0546 14 14 14 14 14 14 14 14 14 14 14 14 14 1	
ाह्यमध्याः. इति	38 - 00845	OPTILMAX Owlet Housing & Cartridg	e 15 25 10254-0547.	
CARTRIDO	Ep. 0 02004	OPTI-MAX Replacement Carundges: [/	8",Ball 2/Pk"	
7. 17.	numbe	from this chart to select the cartridge t	ype you need.	

Model 250, Series 4, 200\*, 400, 410, 620, Integral 4000\* → FREE-TURN™

	Туре	OPTI-Part #	Description	OEM #	Price
	IN ET A A	723 00830	OPTI-MAX Inlet Housing & Cartridge	0254-0177	
	OUTLET	334 00835	OPTI:MAX Outlet Housing & Cartridge \$ 1	0254-0197	erele da ce
	CARTRIDGE	io 62002	OPTI MAX Replacement Cartridges, 1/8' Ball, 2/Pl		
ĺ		number	r from this chart to select the cartridge type you nee	d.	
٦					

For those who prefer repairing check valves with rebuild kits, we offer these precision-made kits.

#### Standard Check Valve Rebuild Kits (Rebuilds 2)

Туре	OPTI-Part #	Description	Price
REBUILD	33-38-00828	Series 1, 2, 3	38102
REBUILD	33-38-00821	Model 250, 9	eries 4, 200, 400, 410, 620, Integral 4000

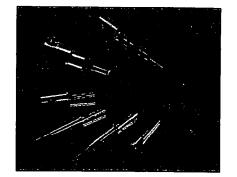
# PERKIN-ELMER

Replacement seals and pistons from Optimize offer superior performance and reliability, and are designed to meet or exceed the specifications of their OEM counterparts. For more information on selecting the best seal for your application, please refer to page 42.

## 

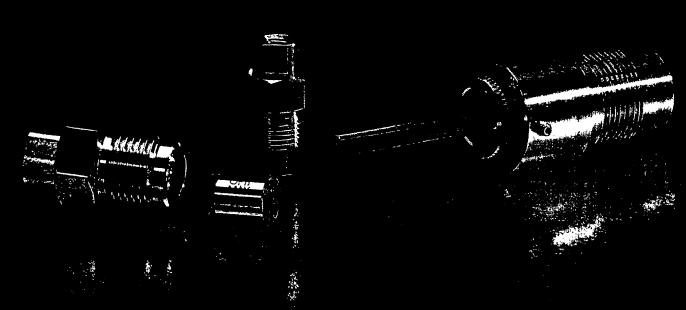
Don't let unexpected pump malfunctions catch you by surprise! Optimize offers HPLC First Aid Kits<sup>™</sup> equipped with a complete set of precision components for your Perkin-Elmer pump, giving you rapid access to the parts you need to keep your system running. We also offer Fittings Kits which contain a useful selection of fittings, unions and plugs, value-priced and specifically tailored to your HPLC pump. See pages 46-47 for more information about accessory kits from Optimize.

Accessory Kits			
Туре	OPTI-Part #	Description	Price
ist AID KIT	33-08-00793	: HPLC First Aid Kit. Model 250, Series 200, 410, 620.	
Ist AID KIT		* HPLC First Aid Kir. Series 4, 400, 410, 620 [Mfd. Before 1, 2/89]	Territoria.
	The state of the s	HPLC First Aid Kit Series 10	at Print
7 44 40 14 14 14 14 14 14 14 14 14 14 14 14 14	3 4 4 5 CA 7 3 CA 7 CA 7 CA 7 CA 7 CA 7 CA 7 CA	HPLC First Aid Kit. Series 1/2/3/3B	
FIT KIT	33-08-00621	Fittings Kit, All Perkin Elmer Pumps	





OPTI-MAX® Cartridge Check Valve System for Shimadzu LC-10AS and LC-10AD



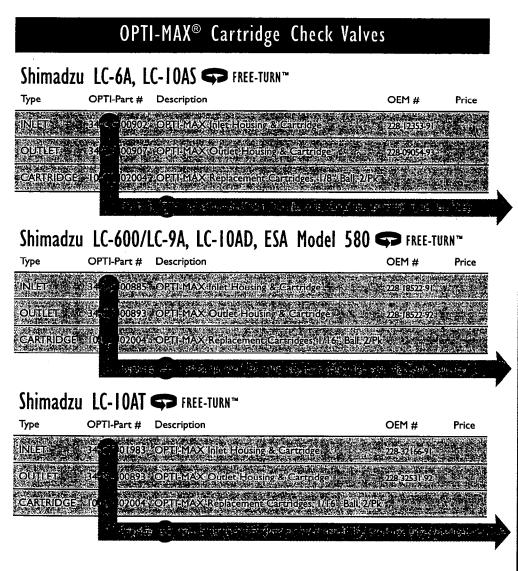
OPTI-MAX® Cartridge Check Valve System and Universal Plunger for Shimadzu LC-10AT

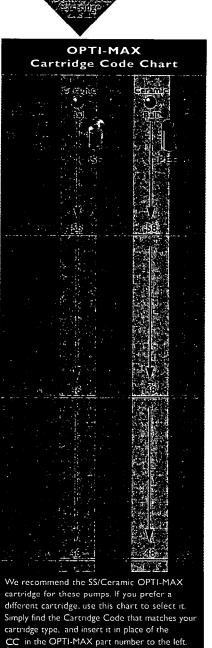
# SHIMADZU

For maximum performance and proven reliability, choose OPTI-MAX® Cartridge Check Valves for your Shimadzu or ESA Model 580 HPLC pump. Universal OPTI-MAX cartridges function as both inlet and outlet check valves, and fit multiple pump models (and brands) using custom-designed housings.

Replacing check valves is a snap — just remove the housing, tap out the old cartridge and put in a new one. Innovative Free-Turn™ housings let you switch cartridges without removing your connecting tubing.

OPTI-MAX cartridges are available in either stainless steel or PEEK, loaded with ceramic or ruby/sapphire matched ball and seat sets. Select the cartridge you require using the chart below. See page 41 for more information.





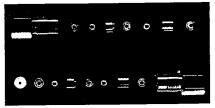
See page 41 for more information.

# HIMAD7II

# SHIMADZU

3

Standard Check Valves for LC-6A, LC-10AS



Standard Check Valves for LC-600/LC-9A, LC-10AD

For those who prefer purchasing standard check valve assemblies or repairing check valves with rebuild kits, we offer these precision-machined replacement parts, guaranteed to meet or exceed OEM specifications.

#### Standard Check Valves

#### Shimadzu LC-6A, LC-10AS

Туре	OPTI-Part#	Description		OEM#	Price
	F. F. SCHOOL 1.5	oriese (nier		#228- 2353-94	
Our Er	2/\$800892	Tested Otitles		228-09054-9	
REBUILD	34-38-00884	Rebuild Kit (Re	builds 2)	.: 228-i 1200-9 i	NAME OF THE PARTY.

#### Shimadzu LC-600/LC-9A, LC-10AD

Туре	OPTI-Part#	Description	OEM#	Price
	: 1 3,542:0035/ri	(Cicilia Para Cara)	4,411,301871(92)278)	
OUT HE	1 KSB-008/A	Visio Onice : " - " - " - " - " - " - " - " - " - "	opisalistasia.	
REBUILD	1 34-38-00876	Rebuild Kit (Rebuilds 2)	228-24410-91	北京等的



The Universal Plunger System is now available for the Shimadzu LC-10AS and LC 10AT. Our exclusive plunger adapter allows you to use our LC-10AS plunger with both the LC-10AS and LC-10AT pumps.

If you need a new plunger for your LC-10AT, you'll need our complete LC-10AT Plunger Assembly (34-34-01997). This assembly includes a 10AS plunger and the 10AT adapter. For subsequent plunger replacements, you only need to install a new LC-10AS plunger (34-34-01345) into the universal adapter. The 10AT plunger adapter is reusable — once you have it, you only need to stock a single plunger to cover both Shimadzu pumps. Lower your replacement costs, reduce waste and minimize plunger inventory with the Universal Plunger System from Optimize.

# SHIMADZU

Replacement seals and plungers from Optimize offer superior performance and reliability, and are designed to meet or exceed the specifications of their OEM counterparts. For more information on selecting the best seal for your application, please refer to page 42.

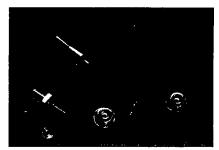
#### Seals and Plungers

#### Shimadzu LC-6A

Туре	OPTI-Part #	Description	OEM#	Price
	the state of the state of	र्तित्व हार् विश्व स्थानिक है। है। है।	PROPERTY.	
		TOTAL BUILDING BUILDING BUILDING		· · · · · · · · · · · · · · · · · · ·
	382.16403EGE	। विद्यान विद्यानिक तुर्वक विदेशी	Millersia.	
्रेगांक्वी श्रीवेख	Karadiga.	A State of a Harmonian and a law of the control of		
grigating day	Mary State of State	Service of the servic	. 74.	

#### Shimadzu LC-600/LC-9A, LC-10AD, ESA Model 580

Туре	OPTI-Part #	Description	OEM#	Price
(3 th 1 3 t, 4 t	Ser Big - Bir Julie 1	· · · · · · · · · · · · · · · · · · ·	file in the problem of the second	
95/4	KPRHOEGA	े पिर्मार्थ्य क्रिकेट के हिन्दू है जिल्ला है ज	a	
gew loter	* KP(0-008A);	ीनार १४४२ से एक्किला का कार्यसम्बद्ध		
Harris I				

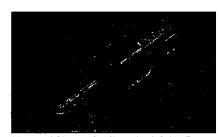


Left to right: Plungers and Seals for Shimadzu LC-600/LC-9A, LC-10AS, LC-6A

#### Shimadzu LC-10AS, LC-10AT

lype	OP11-Part#	Description		OEM #	Price
	W. 3 11.12	平途中新春時	(क्राक्ष्म) जिल्लाक अनुस्कृति । जन्म	A STATE OF A STATE OF THE STATE	
	ga.C. Solg			7.73	
OPPLISE (O)	Specialists.	JOPUSEAL DI	MIXARE BLOKEUD Stalls	######################################	
OB TURE	ী;⊭গ্র-জ্ঞান্ত	OF IS LUE	Works Barken Sept 1		
Figure 184					
14,310,77				A STATE OF THE STA	ا د ند
ा) द्वानस्थिति ।	234 - 12 - 17 - 4	ું વર્ણનું ત્યું મારુઇ)			
* Confirmation				September (1986)	

See Facing Page for more information.



Universal Plunger for Shimadzu LC-10AT

Don't let unexpected pump malfunctions catch you by surprise! Optimize offers HPLC First Aid Kits™ equipped with a complete set of precision components for your Shimadzu pump, giving you rapid access to the parts you need to keep your system running. We also offer Fittings Kits which contain a useful selection of fittings, unions and plugs, value-priced and specifically tailored to your HPLC pump. See pages 46-47 for more information about accessory kits from Optimize.

Accessory Kits					
Туре	OPTI-Part #	Description			Price
st AID K	IT. 🐍 34-08-0085 L 🖇	FIPLC First Aid Kic'LC	6A TO HER LONG	100	
Ist AID K	IT = 34-08-00852	CHPLC First Aid Kit, EC	600/LC-9A, LC-10	AD, ESA Model 580	
ist AID K	IT-₩ 34-08-00887	HPLC First Aid Kit, LC	TOAS	A MARKET SAFE	The Carlot
Ist AID K	IT 48/34-08-02048 A	HPLC First Aid Kit, LC	IOAT 1 W 2 P		(10.70%)A
FIT KIT	34-08-00850	Fittings Kit, All Shimadz	ט		



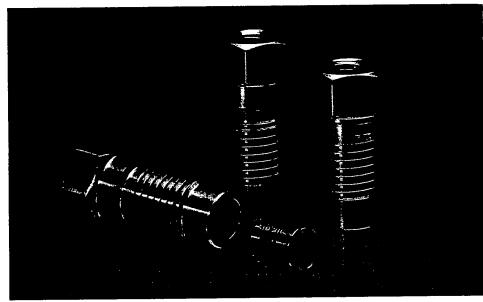
HPLC First Aid Kit™ for LC-6A

# SPECTRA-PHYSICS

For maximum performance and proven reliability, choose OPTI-MAX® Cartridge Check Valves for your Spectra-Physics HPLC system. Universal OPTI-MAX cartridges function as both inlet and outlet check valves, and fit multiple pump models (and brands) using customdesigned housings.

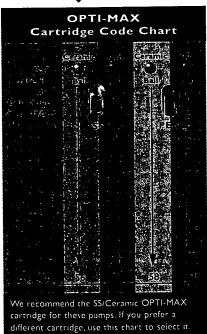
Replacing check valves is a snap — just remove the housing, tap out the old cartridge and put in a new one.

OPTI-MAX cartridges are available in either stainless steel or PEEK, loaded with ceramic or ruby/sapphire matched ball and seat sets. Select the cartridge you require using the chart below. See pg. 41 for more information.



OPTI-MAX® Cartridge Check Valve System for Spectra-Physics





Simply find the Cartridge Code that matches your cartridge type, and insert it in place of the CC in the OPTI-MAX part number to the right.

See page 41 for more information

#### OPTI-MAX® Cartridge Check Valves

#### Spectra-Physics 8700, 8800, 8810, IsoChrom™, P-Series

Type	OPTI-Part #	Description	OEM #	Price
			A3495-010	14.4
SINLE	Service A Control	OPTI-MAX Inlet Housing & Cartridge		
100		All Above Pump Models		
TOUTLET.	35 <b>6-3</b> 0096	NOPTI-MAX Outlet Housing & Cartridge	A3490-010	
	84.25 B. C. C. C. C. C.	8700 8800 8810, IsoChrom Pumps		
		OPTI-MAX Transducer Housing & Cartrid	A3990-010	43.04
TKANSDUC	200	P-Series Pumps	de de la companya de	
CARTRIDO	GE 3 105 E 0 02004	OPTI-MAX Replacement Cartridges, 1/8"	Ball, 2/Pk	
David Care Control	***************************************			

number from this chart to select the cartridge type you need.

# SPECTRA-PHYSICS

For those who prefer purchasing standard check valve assemblies or repairing check valves with rebuild kits, we offer these precision-machined replacement parts, guaranteed to meet or exceed OEM specifications.

#### Standard Check Valves

#### Spectra-Physics 8700, 8800, 8810, IsoChrom™, P-Series

Type	OPTI-Part #	Description	OEM #	Price
INLE CO	55-618-000/A <b>S</b>	iesta inter (All Abova simp Piotela).	412 A3495=010	
	SHEER BARD	. hiereogyanion Medina Alliberagembly	A3485-010	
		्रे सिंग्री को शतिकस्यक्तीय श्रीतिक विजि		
TRANSDUC	ER#35-38-00944 🛪	Tested Transducer, P-Series	A3990-010	
<b>OU</b> META	55,35:6005250	्रिकार (राजना १९४५) है। जिल्ला करते हैं।	* Wateroanio	
	CONTRACTOR OF THE PROPERTY OF	Check Valve Tube Assembly (For Outlet)	the registration of the desire	
เรียมกุกกา	ं अञ्चासकीय	Sand Kiel inn frak Keil alluet	2.7	



Tested Inlet Check Valve



Tested Transducer Check Valve for Spectra-Physics P-Series Pumps



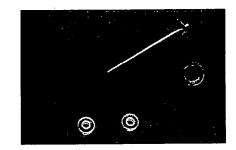
Tested Outlet Check Valve for Spectra-Physics 8700, 8800, 8810 and IsoChrom Pumps

Replacement seals and pistons from Optimize offer superior performance and reliability, and are designed to meet or exceed the specifications of their OEM counterparts. For more information on selecting the best seal for your application, please refer to page 42.

#### Seals and Pistons

#### Spectra-Physics 8800, 8810, IsoChrom, P-Series

Туре	OPTI-Part #	Description	OEM #	Price
() ** ()		্ৰাপুৰি সমূহতে, চাৰাকীকে কি নিয়ন্ত		<b>東京の、東京</b> 72 7 8 1473 5 3 7 1 1 2
65 4.3	A CHARACT	अर्थेकोर विभिन्न करिन		
ing it	e estimate	Tigur te Pagia Seele		
493 6/3	66. 302660361	THE STAGE STOWN		
100 31		क्षेत्रक विकास	The second of the second	



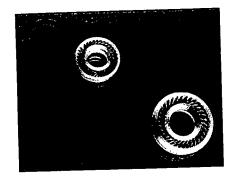
#### Spectra-Physics 8800, 8810, IsoChrom, P-Series (Flush Seal)

Туре	OPTI-Part #	Description	OEM#	Price
्राकृत सुक्ता है	ું કુક <del>ે લેવ</del> ઈ દેવના	是国民政人士中心,其下的《其	\$ 186 million	g
21. 18.	The second	2000年,1000年1月1日 1日本 1882年11日 11日 11日 11日 11日 11日 11日 11日 11日 11日		
		THE CATASTACKINSCEN	~ /\V&65±010	
OFFE OVER	3245(6)005(6)	โกละเจ้าที่สระสักสักริเรายน (0)นิยะ		

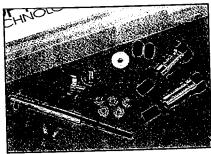
See next page for more Seals and Pistons

# SPECTRA-PHYSICS

Replacement seals and pistons from Optimize offer superior performance and reliability, and are designed to meet or exceed the specifications of their OEM counterparts. For more information on selecting the best seal for your application, please refer to page 42.



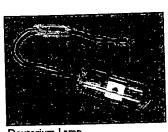
### 



HPLC First Aid Kit™

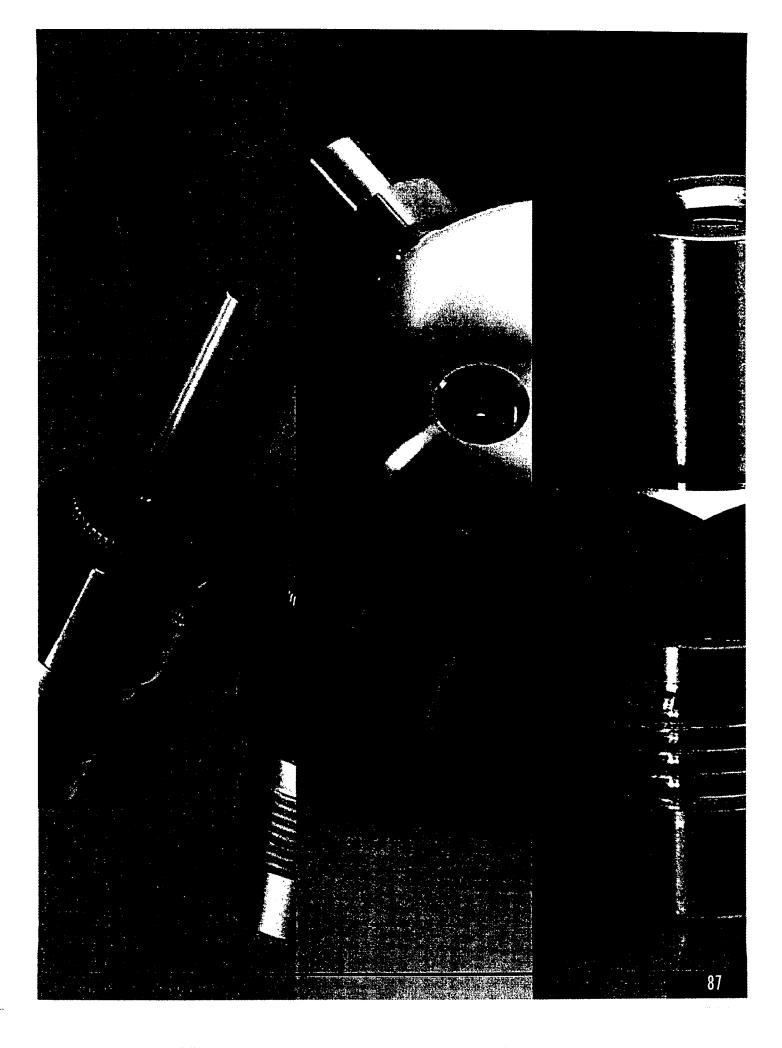
Don't let unexpected pump malfunctions catch you by surprise! Optimize offers HPLC First Aid Kits<sup>™</sup> equipped with a complete set of precision components for your Spectra-Physics pump, giving you rapid access to the parts you need to keep your system running. We also offer Fittings Kits which contain a useful selection of fittings, unions and plugs, value-priced and specifically tailored to your HPLC pump. See pages 46-47 for more information about accessory kits from Optimize.

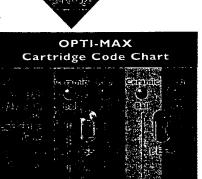
For your convenience, we offer these replacement lamps for your UV detector, which are guaranteed to meet or exceed original manufacturer's specifications.



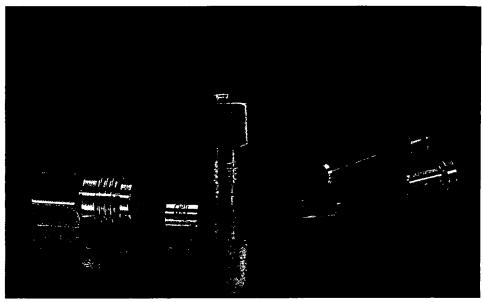
Deuterium Lamp

		Accessory Kits		
Туре	OPTI-Part #	Description	OEM#	Price
		HPEC FIREAIL KIC 8800, 88 (0, 10	Chiom:	
Wat AID:KIT		FIPLC FirstAid Kit R-Series (1988)		
FIT KIT	35-08-00432	Fittings Kit (Rheodyne Injection Val	lve)	
FIT KIT	35-08-00913	Fittings Kit (Valco Injection Valve)		
DAMP ALL	V-5-32-01295	Deuterjum Lamp SP-8450 Detecto	VALEGEOID	
TAMP	3592-0,333	SP Focils Detector Lamp Normal	(955) #0002	





We recommend the SS Ceramic OPTI-MAX cartridge for these pumps. If you prefer a different cartridge, use this chart to select it. Simply find the Cartridge Code that matches your cartridge type, and insert it in place of the CC in the OPTI-MAX part number to the right. See page 41 for more information.



OPTI-MAX® Cartridge Check Valve System and Pistons for SSI

For maximum performance and proven reliability, choose OPTI-MAX Cartridge Check Valves for your SSI HPLC system. These OPTI-MAX also fit BAS PM-48 and ESA 5700 SDM and DuPont 8800 pumps. Universal OPTI-MAX cartridges function as both inlet and outlet check valves, and fit multiple pump models (and brands) using custom-designed housings.

Replacing check valves is a snap — just remove the housing, tap out the old cartridge and put in a new one. OPTI-MAX cartridges are available in either stainless steel or PEEK, loaded with ceramic or ruby/sapphire matched ball and seat sets. Select the cartridge you require using the chart below. See page 41 for more information.

#### OPTI-MAX® Cartridge Check Valves

#### SSI 200 Series, Model 300

Туре	OPTI-Part #	Description	OEM#	Price
INLET.	36 00982	OPTI-MAX Inlet Housing & Cartridge )	1002-01623	4546
OUTLET	36( 00987	OPTEMAX Outlet Housing & Cartridge		
CARTRID	GE 840 C 02004	OPTI-MAX Replacement Cartridges; #1/8/	Ball 2/Pk 100 2	
-31:83- 33-1	3/2 2			

number from this chart to select the cartridge type you need. For those who prefer repairing check valves with rebuild kits, we offer these precision-machined replacement parts, guaranteed to meet or exceed OEM specifications.

#### Standard Check Valve Rebuild Kits



#### SSI 200 Series, Model 300

Туре	OPTI-Part #	Description	OEM #	Price
REBUILD	36-86+20+81 F	रिस्ट्रिमारि दिए (	cabillary	

Replacement seals and pistons from Optimize offer superior performance and reliability, and are designed to meet or exceed the specifications of their OEM counterparts. For more information on selecting the best seal for your application, please refer to page 42.

#### Seals and Pistons

#### SSI 200 Series, Model 300





Don't let unexpected pump malfunctions catch you by surprise! Optimize offers HPLC First Aid Kits™ equipped with a complete set of precision components for your SSI pump, giving you rapid access to the parts you need to keep your system running. We also offer Fittings Kits which contain a useful selection of fittings, unions and plugs, value-priced and specifically tailored to your HPLC pump. See pages 46-47 for more information about accessory kits from Optimize.

Manufactured by Optimize Technologies, these SSI style fittings are machined from type 316 passivated stainless steel and PEEK.

#### Accessory Kits and Fittings

Туре	OPTI-Part #	Description	Price
elst AlDiK	T-66-16-08-00968-	HPLGsFirst Aid Kir 200 Seriesawich self-flushing opdon)	
LE AID KI	nF = 18408±00567.*	ILPLO First Aid Kir 200 Series (without set flushing option)	
FIT KIT	36-08-00621	Fittings Kit	
CARREN	£ 6.36-24-00969	#I/4-28 Nur för I/46 OD Tubing	
	36-24-01674	Ferrule, SS For 1/16" OD Tubing	
	36-24-00970	Nuts (36-74-00969) and SS Ferrules (36-24-01674), 10/Pk 36-36-	
	10-20-00269	OPTI-LOK 6K Double-Tight Ferrule, PEEK	
W. W. W.	## (0-20-00330-¥	OPTILLOK 6K 1/4 28 Hand Tight Nut. PEEK	ar kali ki kila
	10-20-00331	OPTI-LOK 6K Hand-Tight Nuts (10-20-00330) and 6K Double-Tight PEEK Ferrules (10-20-00269), 10/Pk	



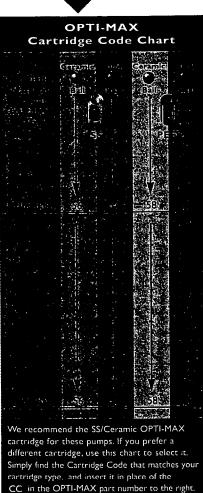
# VARIAN

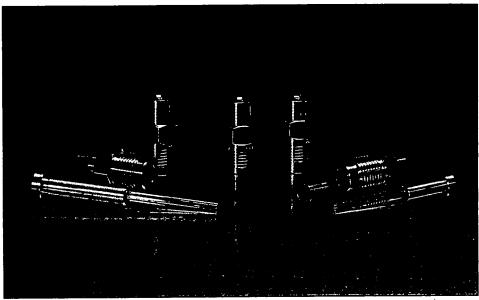
For maximum performance and proven reliability, choose OPTI-MAX® Cartridge Check Valves for your Varian HPLC system. Universal OPTI-MAX cartridges function as both inlet and outlet check valves, and fit multiple pump models (and brands) using custom-designed housings.

Replacing check valves is a snap — just remove the housing, tap out the old cartridge and put in a new one. Innovative Free-Turn housings let you switch cartridges without removing your connecting tubing.

OPTI-MAX cartridges are available in either stainless steel or PEEK, loaded with ceramic or ruby/sapphire matched ball and seat sets. Select the cartridge you require using the chart below. See pg. 41 for more information.







Left to Right: Piston for Varian 2010/2510, OPTI-MAX® Cartridge Check Valve System for Varian 2010 (Inlet and Outlet), Varian 2010 (Inlet and Outlet), Varian 9000 Star (Outlet), and Piston for Varian 9000 Star

#### OPTI-MAX® Cartridge Check Valves

Varian	2010	9	FREE-TURN™
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Туре	OPTI-Part #	Description	OEM #	Price
INLET I	38 67 01038	OPTEMAX Inlet Housing & Cartridge	) -	
OUTLET.	381 01043	OPTI-MAX Outlet Housing & Cartridge	7 7 700 997261-10	
CARTRID	GE 10 02004	OPTI-MAX-Replacement Carcidges; I/8	"Ball 2/Pk	
1 TABLE	numbe	from this chart to select the cartridge ty	pe you need.	

#### Varian 2510 & Varian 9000 Star FREE-TURN™

Туре	OPTI-Part #	Description	OEM #	Price
INLEF		OFTILMAX Injet Housing & Carcinge, 2510	*** 1:00-997554-19	
QUILET:	14 3 <u>8</u> - 01546	OPTEMAX Outlet Hodsing & Cartridge 725.10	00-9975541	
् <b>ट</b> ार्डिंग स्ट्रीतर	- 13 1 10¢	্ৰান্তৰপ্ৰতে কিলালে কিলাটু লাভিন ইটাই		
CARTRIDO	E 10 02004	OPTLMAX Replacement Cartridges: [/8//Ball,	2/PK 1.2 12 15 15	
19-9/24	numbe	r from this chart to select the cartridge type you	ı need.	

See page 41 for more information.

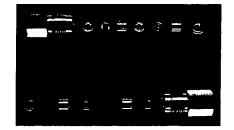
# VARIAN

For those who prefer purchasing standard check valve assemblies or repairing check valves with rebuild kits, we offer these precision-machined replacement parts, guaranteed to meet or exceed OEM specifications.

#### Standard Check Valves

#### Varian 2010

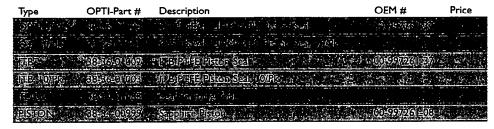
Туре	OPTI-Part #	Description		OEM #	Price
			WANTED STREET		
OUTLE	4 (F 38 38 0 102 F 4	ales e Oude		00 99726 [][0	
REBUILD	38-38-01023	Rebuild Kit (R	ebuilds 2) 🌣 👍 🖖	\$\$ 68 56	推出的流流

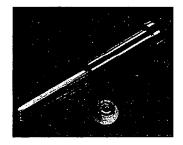


Replacement seals and pistons from Optimize offer superior performance and reliability, and are designed to meet or exceed the specifications of their OEM counterparts. For more information on selecting the best seal for your application, please refer to page 42.

#### Seals and Pistons

#### Varian 2010, 2510





#### Varian 9000 Star

Туре	OPTI-Part #	Description	OEM#	Price
56 pt.		TOP THE THE WAR SE TO THE		
ZA BOTH	Yes a Samuel	TOTAL SHOWER SHOW THE WAR		
IIIE V	38-26-01 64E	His Block state graft, South		
ITB VO'PO	36\$000.55¢	AFTE PUTE (PERSY SEED) TOTALS		
ો જેવા	146 140 140	रिनामी प्राप्त रिकास	is a resemble to the first	

Don't let unexpected pump malfunctions catch you by surprise! Optimize offers HPLC First Aid Kits™ equipped with a complete set of precision components for your Varian pump, giving you rapid access to the parts you need to keep your system running. We also offer Fittings Kits which contain a useful selection of fittings, unions and plugs, value-priced and specifically tailored to your HPLC pump. See pages 46-47 for more information about accessory kits from Optimize.

#### Accessory Kits

Туре	OPT1-Part #	Description	Price
Ist AID KIT	38-08-00998	HPLC First Aid Kic 2010 1	
Ist AID KIT	38-08-02047	HPLC First Aid Kit. 2510	
Ist AID KIT	38-08-02049	HPLC First Aid Kir. 9000 Star #	BBAN
FIT KIT	38-08-00913	Fittings Kit (Valco Injection Valve)	1
FIT KIT	38-08-00432	Fittings Kit (Rheodyne Injection Valve)	



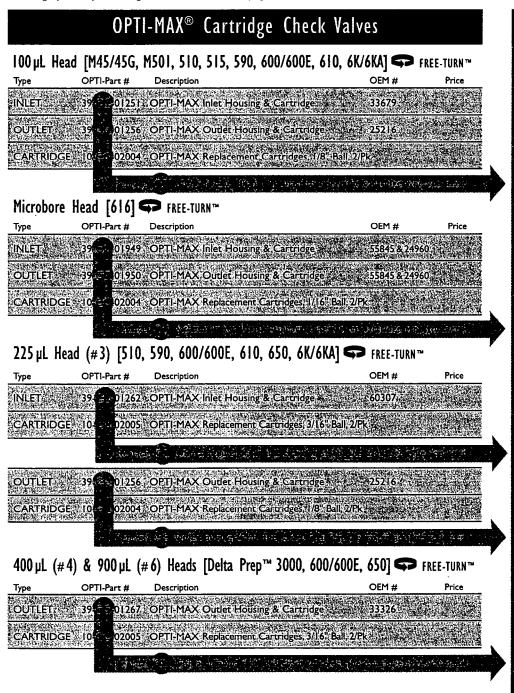
OPTI-MAX® Cartridge Check Valve System for Waters 616, #3 Heads (Inlet) and #4/#6 Heads (Outlet)

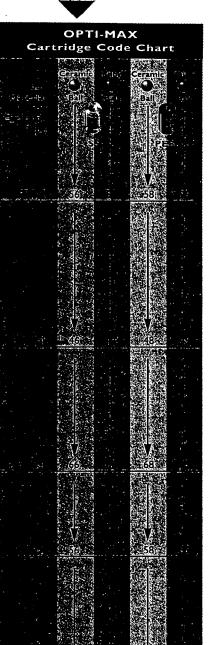


OPTI-PRIME™ Pump Head and OPTI-MAX® Cartridge Check Valve System for Waters Pumps

# WATERS

For maximum performance and proven reliability, choose OPTI-MAX® Cartridge Check Valves for your Waters HPLC system. Replacing check valves is a snap — just remove the housing, tap out the old cartridge and put in a new one. Innovative Free-Turn™ housings let you switch cartridges without removing your connecting tubing. OPTI-MAX cartridges are available in either stainless steel or PEEK, loaded with ceramic or ruby/sapphire matched ball and seat sets. Select the cartridge you require using the chart below. See page 41 for more information.



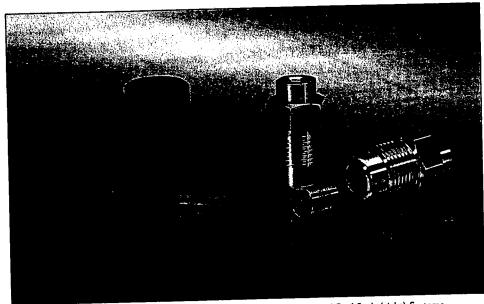


We recommend the SS/Ceramic OPTI-MAX cartridge for these pumps. If you prefer a different cartridge, use this chart to select it. Simply find the Cartridge Code that matches your cartridge type, and insert it in place of the CC in the OPTI-MAX part number to your left.

See page 41 for more information.

For maximum performance and proven reliability, choose OPTI-MAX® Cartridge Check Valves for your Waters 625, 626 and Backflush HPLC Systems.

Model 625 and 626 solvent delivery systems are designed for bio-compatible applications. To maintain a bio-inert flow path in these systems, use only PEEK OPTI-MAX Cartridges with ceramic or ruby/sapphire balls and seats. To select the type of cartridge you require, use the chart below. See page 41 for more information.



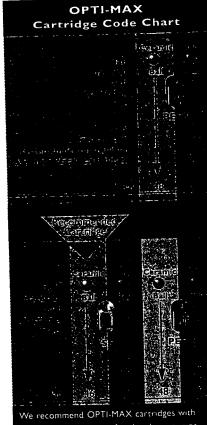
OPTI-MAX® Cartridge Check Valve System for Waters 625/626 (left) and Backflush (right) Systems



### OPTI-MAX® Cartridge Check Valves

#### 625/626

Туре	OPTI-Part #	Description		OEM#	Price
NET I	7939 3001907	OPTI-MAX	nlet Housing & Cartridge	30541 & 24120	
CUITEIT	39 01909	OPTI-MAX	Outlet Housing & Cartridge	30543 & 24120	
CARTRIDG	G 10 02004	OPTI-MAX	Réplacement Cartridges, 1/16" Ball.	2/Pk 2	
		<b>非种类的</b>	Lancha contride type VOI	need.	
. E.	numbe	r from this ch	art to select the cartridge type you		



We recommend OPTI-MAX cartridges with ceramic balls and seats for the above pumps If you prefer a different cartridge, use this chart to select it. Simply find the Caitridge Code that matches your cartridge type, and insert it in place of the CC in the OPTI-MAX part number to the right. See page 41 for more information.

### Backflush FREE-TURN™

Туре	OPTI-Part #	Description	and the state of the state of the state of
INLET !	39 01979	OPTI-MAX Inlet Housing & Cartridge	
OUT ET	39 31 01980	OPTI-MAX Outlet Housing & Cartridge	
		*OPTI-MAX Replacement Cartridges, I/16" Ball, 2/Pk	
CARLKID	GE TO 2200	<b>建设的工程的工程,在1000000000000000000000000000000000000</b>	A STATE OF THE PROPERTY OF THE
1	ार्ट क्रिकेट numbe	r from this chart to select the cartridge type you need.	

Price

For those who prefer purchasing standard check valve assemblies or repairing check valves with rebuild kits, we offer these precision-machined replacement parts, guaranteed to meet or exceed OEM specifications.

#### Standard Check Valves

#### 100 µL Head [M45/45G, M501, 510, 590, 600/600E, 610, 6K/6KA]

Туре	OPTI-Part #	Description	OEM #	Price
NUETA	vi. 20±0±01710	areaching aver-	<b>种的15</b> 25214分析	
REBUILD	39-38-01226	Rebuild Kit (Rebuilds 2) 15	60495	
	- 1240/01/E/I	- Helowers - Park - I	(4) (1000)	
	39-38-01221	Gasket Retainer	. 60435	Saction 1
	\$55-66-61/ <i>972</i> ;	PERMIT	1 2 03077	
14470274	39-38-01308	Ruby Ball/ Sapphire Seat 1/8"	ந்த சட்ச <b>25306</b> நட்டும்	<b>第43条件</b>
	: :XGENO401275K)	Wester	· . 4 * 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2	
	39-38-01225	Inlet Housing	25203	<b>特別</b> 種
OUTLET	302199337	, resectable Seatonier Greekväve,	/8 15 25 A 6 1 4 1	
REBUILD:	39-38-01243	Rebuild Kit (Rebuilds 2)	26014	THE PARTY
	- 20:38-01/29;	"mor "Weape" .		

### 100 µL Head, Spring Actuator Style [510, 590, 610]

Туре	OPTI-Part #	Description	OEM #	Price
<b>्रविधा</b> धनाः	, designing	Texter Sound withou Only Co	eacyalce 2306 c	
REBUILD	39-38-01236	Rebuild Kit (Rebuilds 2)	1 26016 Aug	
	1950 B (1978)	Orter House	782(n. s.	
Sept 18	39-38-01229	Cup Filter	\$\$	
	40,5040504	\$1.40 × 1.20 × 1	**	
经销售集	39-38-0 232	Actuator	[1] [1] O5084 [2] [1]	
	3940H2H2H	Weining Serenie	03068	
<b>WARKE</b>	39-38-01234	PTFE Washer	(1986년) <sup>15</sup> 105096 기계 1	<b>列生共和国</b>

### 225 µL Head (#3) [510, 590, 600/600E, 610, 650, 6K/6KA]

Туре	OPTI-Part #	Description	OEM #	Price
INEE	ें ा ~£9 4850k4#) ±	sect same with with the section	vike glievi (delovi s	
THE REAL	39-38-01245	Extended Flow Housing 📭 🕸 🔻	· \$14-11-15-2-60308。运程	
	n Regiraliza	્યાનકોના કોના	5040XX	
147814	39-38-01311	3/16" Ball & Seat 10 10 10 10 10 10 10 10 10 10 10 10 10	32646	對對時間對
	+ #\$648.017497	्डा <u>क</u>	\$ 175 × 39705 r 4+1	
TORKS	39-38-01248	Retainer	32707 🔠 🖖	学业的制度
		্রোল্ডপার পিঞা	recorded Williams	
OUTLET	39-38-01237	Tested Ball & Seat Outlet Check Va	lve, I/8" 🚆 25216	洲海绵
REBUIED		्रद्वमणीवर्गक्षक्ष(द्ववनगोधः २)	260(4)	
Plant 199	39-38-01239	Rulon Washer	1-1-1-1-1-05071 A 11-1	存於計劃

### 400 µL (#4) & 900 µL (#6) Heads [Delta Prep<sup>™</sup> 3000, 600/600E, 650]

Type	OPTI-Part #	Description		OEM #	Price
LOUTLER	39-38-0[249	Filested Extended	How Omler 3/16 af Hart	\$\$\$\$76. ***	
PARTICULAR SECTION SEC	CALICOLOGICAL CONTRACTOR CONTRACT	COLUMN TO SERVICE MANAGEMENT OF THE PARTY OF	ouilds 2)	Contract Assessment State of College Contract Day of State of College Contract Day of College	
200 100 100 100 100 100 100 100 100 100					



Tested Inlet Check Valve



Tested Ball & Seat Outlet Check Valve



Tested Spring Actuator Outlet Check Valve



Tested Extended Flow Inlet Check Valve



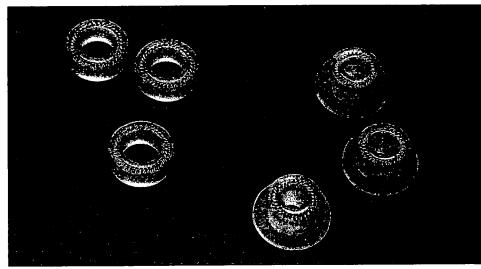
Tested Ball & Seat Outlet Check Valve



Tested Extended Flow Outlet Check Valve



ITB™ PTFE Plunger Seals



OPTI-SEAL® UHMW-PE Plunger Seals

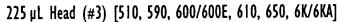
Replacement seals and plungers from Optimize offer superior performance and reliability, and are designed to meet or exceed the specifications of their OEM counterparts. For more information on selecting the best seal for your application, please refer to page 42.

Plungers for Waters Pumps (top to bottom: 39-34-01193, 39-34-01188 and 39-34-01191)

### Seals and Plungers

### 100 μL Head [M45/45G, M501, 510, 515, 590, 600/600E, 610, 6K/6KA]

Туре	OPTI-Part #	Description	OEM #	Price
		े क्रांप्रेश्वहर्ये जुमेरे श्रेणकावा प्रवास क्रिक्त ।	. 2016 A	
3.2 6,6	Transform	Chique Milyanaman armati sair mak		
		And Price Punger Seal Black	26613	
SUB IO/PAS	-139:36:0 207:57	INBERNACE Plunger/seal Blacks to the seasons		
7.18	The Property of the Parks	TE FATTE BUDGET FOR NEW YORK	74575	ing and a second
THE FILE	\$ 240° £40° £40°	The Post sense see has a first		
		Ing (Ang Elvinger Sea gan)	25000	1250
ITB/IO/Pk		rdanska radalinger Seatan (10/8, St. 1997)		
'સલગુજા <b>ં</b> કુંદ્રમ		Thomas Erra Marine and the control of the control o	JAN SELL	
REUNGER W	#39/340  21 <b>*</b>	PRIMETER FOR MASASIG, MEON CONTROL OF THE STATE OF THE ST	-76574	2,77
当事的"理》	1444	ति विदेश में विश्वपति वेस्तर है जो नाम को जोने कर	Parking the	



Туре	OPTI-Part #	Description	OEM #	Price
2 8.00	e marine	्रिक्षेत्रीक्षाहरू अस्तिति वृद्धेन मानुस्य अस्ति।	20.5	
TA INT	- 1823-007	्रीव्यक्षिक वास्रिक्षकान्त्रे । व्यक्तालाः । व्यक्ति		
EITB WAR	PN 5956-01214	TB PTFE Plunger Seal Extended Flows	26649	
ITB: 10/Pk	647-39-36-01215)	IT B PL FE Plunger Seal Extended Flow 10/PK		
<u>स्ट्रीलियां</u>	了的表示可以表示。	Pilmas Roseis Silvinia	18. 18. 18. 18. 18. 18. 18. 18. 18. 18.	مي العيادية. العياد العاد

616, 625/626

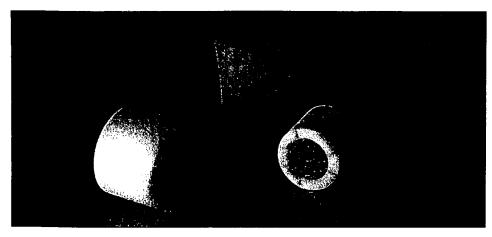
Туре		Description	OEM#	
विक्रिया	FARRONIA .	्रेग्णेंबर्व्य क्रिकेट हैं		



Plunger and Spring for 616 and 625/626

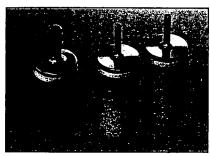
### WAICK

### WATERS



OPTI-SOLV™ Solvent Reservoir Filters (above) are made using PTFE and Titanium. Optimize Solvent Reservoir Filters with Stem (right) are made of Hastelloy C® for maximum corrosion resistance and inertness. They are an improved version of the Waters stem-type filter.

For extended flow systems, and where flow rates exceed IOmL/minute, a I0-micron filter is required, while a 2-micron filter is preferable for most analytical applications. For more information about reservoir filters, please refer to pages 14 and 15.



Solvent Reservoir Filters with Stem

### Solvent Reservoir Filters

	Solvent Reservoir Filter with Tube Stem For 1/8" ID Tubing	OPTI-SOLV Analytical Filters For 3/16" OD Tubing For 1 Liter Solvent Bottles	OPTI-SOLY Prep Filters For 3/16" OD Tubing For 4 Liter Solvent Bottles
्रक्ष्युर्			
242.86	10-04-00 (15-6)	10-04-00054	10-02-0000db
2 Micron and	10-04-90(4)	10-04:00056	(0-04-00068)
WALCO MIC TO	10-04-00 (1) - 23-74	10-04-00057	10-04-000559
10 Micton 5/8	10-04-00 HZ	10-04-00858	10.04000000

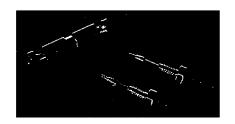
Optimize Technologies manufactures Waters-style compression screws and ferrules exclusively from type 316 SS. Compression screws and ferrules are acid passivated for optimum chemical resistivity.

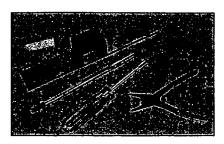
### Compression Screws & Ferrules For 1/16"OD Tubing

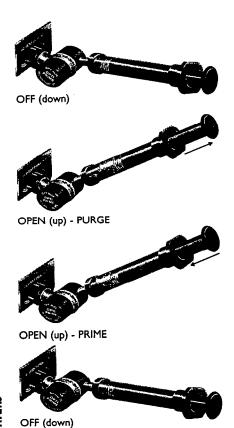
OPTI-Part #	Description	OEM#	Price
36-45).066	(अंशकुर प्राप्ताक केर-बाक्सक हैं।	rita e	
39-24-01090	Compression Screw Ssire 1984	0.50/0;	17.1
35. 43 to 200	ARRIGER TO THE STATE OF THE STA	Transaction	
39-24-0 (09)	(Compression Screws (1954) 0050) & Ferrilles (1952) 0050) (107F/c)	750%	
2004030	्रीभंद्रस्थातः भरताहः इद्यान्ताता जीवन्तिः । । । । । । । । । । । । । । । । । । ।	e Alfab Fill of the con-	

Designed specifically for Waters, these tools help increase the ease and safety of pump repairs.

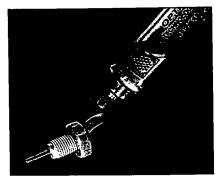
	Specialty Tools		
OPTI-Part #	Description	OEM#	Price
39-10-01077	Plunger Insertion Tool	11042	NEW SHILL
39-10-01083	Seal Forming Tool	76765	
39-10-01078	Foot Vise for Waters Pump Heads	er sin tribally h	Stary-Pres
39-10-01085	Slotted Nut Driver for 1/16" Compression Screws	76374	
39-10-01084	Clip Ring Pliers	25263	
39-10-01086	Waters Specialty Tool Kit (Includes one each of the ab		



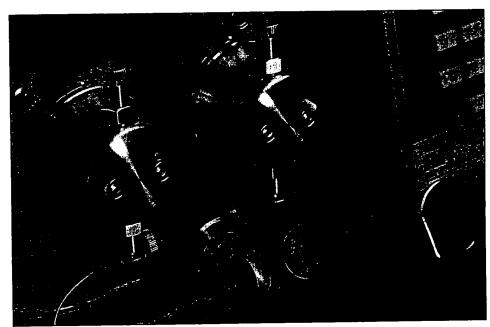




Prime your Waters Pump in four easy steps!



OPTI-PRIME™ Priming Valve



OPTI-PRIME™ Pump Heads and OPTI-PRIME™ Priming Valve with OPTIMIZE Safety Syringe

Are you tired of repeating the frustrating procedure of priming your Waters analytical pump? Are you having nightmares about 17 gauge, stainless steel, blunt tip, luer hub needles with ferrules swaged on them? Then you need an OPTI-PRIME Priming Valve. OPTI-PRIME reduces the priming procedure to a simple task that takes only seconds. An easy, one-time installation eliminates wear and tear on the seal insert; there is no need to use the standard draw-off tube, or to cut a piece of Teflon® tubing and force it over the stem.

Wetted Materials: PPS, PTFE, and 316 Stainless Steel — the OPTI-PRIME valve is inert to all commonly used HPLC solvents.

**Single-Handed Operation:** After the valve is tightened and in the off (down) position, attach the syringe to the luer adapter. Rotating the syringe upward turns the valve to the open position.

No Need to Remove the Syringe During Priming: The innovative design of the OPTI-PRIME valve allows it to rotate upward, letting the air rise naturally to the top of the syringe. This eliminates the need to remove the syringe to expel air once solvent reaches it.

No Air Is Injected Into Your Pump: Simply stop pushing on the syringe plunger before air reaches the valve. After priming is complete, rotate the syringe back down. The valve is now closed and the syringe can be removed.

Fits Single Solvent Pumps: M45/45G, M501, 510, 590, 600/600E, and 610.

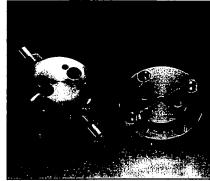
Fits Multiple Solvent Inlet Pumps: 6K/6KA.

	OPTI-PRIME TA Priming Valve U.S. PAT. NO. 5,616,300	
OPTI-PART #	Description	Price
32-31-61433	્લાગાનગાનું વિવેશકાણ-Varde	
39-31-01 170 F	OPTI-PRIME Priming Valve with OPTIMIZE Safety Syringe	
2924 (B) (B)	@F:181/42-Sties 3/17 (8)	1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1

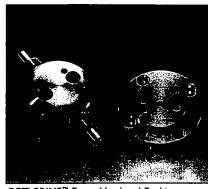
The simplicity of our OPTI-DRAW™ Draw-Off Tube Assembly makes priming a Waters pump fast and trouble-free, lust push the priming syringe directly onto the OPTI-DRAW adapter. You can use any luer tip syringe to prime the pump without installing extra parts.

The OPTI-PRIME™ Pump Head primes easier, and eliminates many of the bubble trapping problems formerly associated with Waters pumps. Our Fluid Upgrade Kit upgrades all 6K and 6KA pumps with rectangular heads to new OPTI-PRIME™ heads with OPTI-MAX® Check Valves.

OPTI-DRAW™ Draw-Off Tube with Adapter



OPTI-PRIME™ Pump Head and Bushing







We recommend the SS/Ceramic OPTI-MAX cartridge for these pumps. If you prefer a different cartridge, use this chart to select it. Simply find the Cartridge Code that matches your cartridge type, and insert it in place of the CC in the OPTI-MAX part number to the left See page 41 for more information.

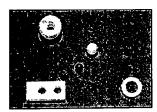
#### Pump Priming Accessories

OPTI-Part #	Description	OEM#	Price
Keling: D.	Smartch Charlest 197		· · · · · · · · · · · · · · · · · · ·
3441031446	OF THE NAW OF WASHINGTON THE KILLING TO THE		
Replication (A)	CP TIME Series senting	\$2759E	
9930 JOHNS 19	Mediponis Medatarula	25559	
1975	क्षणाहुद्ध "गामा हु केहराज विद्यान एक अलेलावा है कि हैं विद्याहर के		
	स्थान के कर सुन्त नामान प्रति । सुन्त ।	Name of the opposite of	Carlo de Carlo
	Country Sympoletic Open Alexander Symbol Mediter Machine		
An area desired to the con-	- सम्भानिकारिकार्यः । भारत्युः व्यवस्थाने । भारत्यः अस्तान्यः वर्षः भीत्रवर्षः केन्त्रः विकार	ં કો ફોકોલ	
392311-0131377	ranna koro anggora prangwall konnokategor	7420.6	
94 S 3 3 5 8	मारिका के महिला है है के अपने के असे के हम के कि कि कि के के के कि	4.2.	
	PRESENTED TO THE STATE OF THE S		
	्रीक्षण स्थापनिक प्रभावत् । संस्कृति कार्यः प्रमाणिकारो स्थापना प्रभावत् । । । । । । । । । । । । । । । । । । ।		
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	Manager and Section of the Control o		
	-gra-1292-22		
g coe	्राकृतमञ्जासन्त स्वतिकार्यक्षात्रीकार्यसम्बद्धाः विकासम्बद्धाः । इतिहासमञ्जासन्त स्वतिकार्यकार्यकार्यकार्यकार्यकार्यकार्यकार्य		
isi - Tayungi	भूषा अवस्थान के दुन वर्षीय भाग द्वीताला का उपलब्ध द्वारा मान	1.00	
	· Bulleting		
	প্রতিষ্ঠিত বিশ্ববাদের প্রথম প্রতিষ্ঠিত বিশ্ববাদের প্রতিষ্ঠিত করিছে । প্রতিষ্ঠিত বিশ্ববাদের প্রতিষ্ঠিত বিশ্ববাদ বিশ্ববাদের প্রতিষ্ঠিত বিশ্ববাদের প্রতিষ্ঠিত বিশ্ববাদের প্রতিষ্ঠিত বিশ্ববাদের বিশ্ববাদের বিশ্ববাদের বিশ্ববাদের		
	জাইন্ কৈন একে উন্তৰ্গ প্ৰতিভাগৰকলৈ ই ডিক্সেট্ডিয় ইনিউন্তৰ্গত সংগ্ৰাহ উন্তৰ্গ জন্মতালকলেন্ত্ৰ ওড়া নামুক		
	- Fund Les transportations	4	

Manufactured by Optimize Technologies, these replacement parts meet or exceed the specifications of those supplied by Waters and have been designed to improve performance and serviceability.

#### Inlet Manifold Rebuild Parts

OPTI-Part #	Description	OEM #	Price
89 3 (-04) 440	EdjaPing	05060	
39-31-01145	Rectangular Draw-Off Seal, 6K/6KA	05087	<b>第</b> 年的的
39 3 E 0   293 -	\$16162dec Sealthsen#MA5/45(C1M50)#5108550.600.600E.8.61.01	0,0008	
39-31-01143	Ruby Ball	05089	90.46年
3938-01233	AcuatorocaeRite	2568	
39-31-01133	Oil Seal, 6KA	05081	1964 E.S.
39201-01174	alnet Manifold Rebuild Kr.: (K45/45G(M58): 550-550-660/600E12/610/4		
	*Contains one each of the above parts (except 39.3 FO) (45)		



Inlet Manifold Rebuild Kit



WISP™ Fluid Pack Kit



712 Injector Kit (Old Style)



712 High Pressure Valve Kit

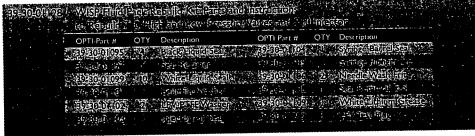


715, 717 Seal Pack Kit

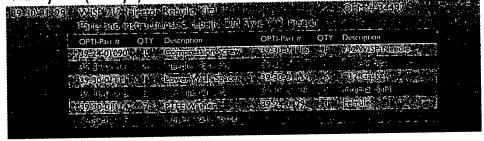
Manufactured by Optimize Technologies, these replacement parts meet or exceed the specifications supplied by Waters, and will improve performance and serviceability.

#### WISP™ Rebuild Kits

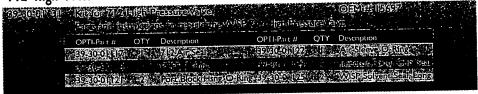
#### WISP™ Fluid Pack Rebuild Kit



#### 712 Injector (Old Style) Rebuild Kit



#### 712 High Pressure Valve Rebuild Kit



#### 715, 717 Seal Pack Assembly Rebuild Kit



Eliminate reproducibility errors by replacing the Waters supplied in-line filter in your WISP system with the OPTI-SOLV™ In-Line Solvent filter. For more information, see page 12.



PEEK (top) and SS (bottom)

OPTI-SOLV™ In-Line Filters

### OPTI-SOLV™ In-Line Solvent Filter

OPTI-Part #	Description	Price	OPTI-Part #		Price
	O.S. rima Galais (Garopai Date)		10-04-00391	PAPER PEER STREET FROM	
10-04-00383			10-04-00390	Spin Si Wierdi i Itali.	
	0.5: µm-Replacements   1965-119/09		10-04-00103	2 pm Réplacement d'is:	//43

WISP<sup>TM</sup> components manufactured by Optimize Technologies are equivalent to those supplied by Waters. Dimensions and materials conform to precise specifications to guarantee the highest possible performance.

### WISP™ Sample Processor Replacements

OPTI-Part #	Description	OEM#	Price
हरात्राहरू	THE I WANT TAKEN	70.00	o o o o o o o o o o o o o o o o o o o
\$19=d0E0110925	Liguit SealidBadk	05   0   44	Barrier K
BE BUSTONS	े कर <sup>्</sup> रूपर्देश क	7.050 Q	
£19£310£01109991)	Liquid Seat White	7 05 fi 2 <b>7 3</b>	<b>Male pa</b>
\$3.464.70f	्रिकृ शिवंद अंश्वनुसर		
3923020(3104	Syringe (Barrel Seal)	<b>3</b> 77347.	
े की किसी होई	अर्थासबद्धेन प्रश्निक्त अर्थाः	314160	
30±30±01±0;fi	Sperier, -ower Needle Wash	0513475	
રહેર સંદેષણ	on Braine Late	75416	
37-80-01-14	PRIESWENG?	05(8)5(6	
~3.65~4. 1.67 1.69 1.17.	अक्राम १ एक्ट्र सम्बद्धीः १६५३	ng zg.	
36-30-014-16	WISP-Needle,742,72.star@7Ay	77233	<b>770</b> (3)
Problem	Bugger ha see.	747 161	
32-30-01 <sup>7</sup> 183	nārā≑©ading 7/12/EiÿV	<b>Final</b>	
अधिकारिक १० ३४।	Onk in aron has	regulft	
19:0:011933	Wish Solvene State work		

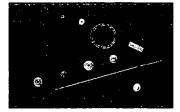
Don't let unexpected pump malfunctions catch you by surprise! Optimize offers HPLC First Aid Kits<sup>16</sup> equipped with a complete set of precision components for your Waters pump, giving you rapid access to the parts you need to keep your system running. We also offer Fittings Kits which contain a useful selection of fittings, unions and plugs, value-priced and specifically tailored to your HPLC pump. See pages 46-47 for more information about accessory kits. Replacement lamps your UV detector are guaranteed to meet or exceed original manufacturer's specifications.

### Accessory Kits and Lamps

OPTI-Part #	Description	OEM#	Price
ist AID KIT	39-08-01073 SHPLC First Aid Kit, 100 µL Head [M	45/45G, M501]	A. 1421
TgeAler@ic	\$9100-01077. HPLGCFjrstandiae 100 nlyfeath b G00/6008-010-018/6KAN		
Ist AID KIT	39-08-01076 HPLC First Aid Kit, 225 pL Head (#. 600/600E, 610, 650,6K/6KA]	3) [510, 590,	
artaid duc	ASSOCIATION HIGHERITATION OF THE PARTY HER STATES OF THE S		
FIT KIT	39-08-01072 Fittings Kit for Waters Pumps		水汽油
ALAKITA B	19.3240 h (75.304) Hercury (Lamp) (40.8/44) 3.484/4	\$4.00 Sec. 10.070 L	
LAMP	39-32-01176 Zinc Lamp, 441	97723	\$ \$\$\$\$\$\$\$
LAMP	(30/39/2014)78/ Cadmium Lamb/All	<b>第二人称称第</b> 57页第	
LAMP	39-32-01178 Quartz Lamp, 150C	75631	
JAMP ALSO	9-32-01179 Deuterium Lamp 484.594	24 PM 80357 C	
LAMP	39-32-01180 A Source Lamp, 401	48419	<b>以外发音器</b>
LAMPS	8 39-3740(N 85) A sincandescent Lamp /5/PK / 1994	05093	251.00
LAMP	39-32-01187 Deuterium Lamp, 486	80678	
LAMP HE	39-32-01294 & Deuterium Lamp. 450	98946	
LAMP	39-32-01295 Source Lamp, 480 & 481	99499	



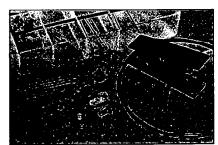
250 µL WISP Syringe



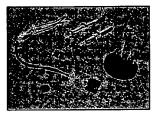
WISP Replacement Parts



**WISP Seals** 



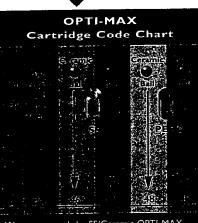
Fittings Kit



Lamps for Waters Detectors

### OTHER BRANDS





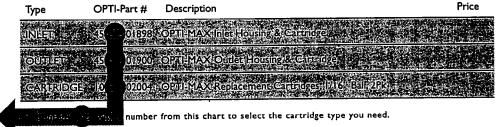
We recommend the SS/Ceramic OPTI-MAX cartridge for these pumps. If you prefer a different cartridge, use this chart to select it. Simply find the Cartridge Code that matches your cartridge type, and insert it in place of the CC in the OPTI-MAX part number to the right. See page 41 for more information.

For maximum performance and proven reliability, choose OPTI-MAX® Cartridge CheckValves for your HPLC system. Universal OPTI-MAX cartridges function as both inlet and outlet check valves, and fit multiple pump models (and brands) using custom designed housings.

Replacing check valves is a snap — just remove the housing, tap out the old cartridge and put in a new one. OPTI-MAX cartridges are available in either stainless steel or PEEK, loaded with ceramic or ruby/sapphire matched ball and seat sets. Select the cartridge you require using the chart below. See page 41 for more information.

### OPTI-MAX® Cartridge Check Valve

#### Kontron 420/422 M-Head



NOTE:We also offer the OPTI-MAX Cartridge Check Valve System for Tosoh model CPM pumps sold in the Japanese market.

Replacement seals and pistons from Optimize offer superior performance and reliability, and are designed to meet or exceed the specifications of their OEM counterparts. For more information on selecting the best seal for your application, please refer to page 42.

#### Seals and Pistons

#### Knauer M640

Туре	OPTI-Part #	Description	Price
	Mederner.	of the fact of the first that the first of the fact of	

### Kontron 420/422 M-Head

Type	OPTI-Part #	Description	Price
ARTON.	-5-34501027	Pision	

#### Tracor

Туре	OPTI-Part #	Description	Price
<u>េីក្រុង</u> ម៉ូក		Constant Editor Primer and	
50 00	4 - 5 - 3 + 5 (A)	हैं। भारतीय के किस के जान के किस के अपने किस के किस के किस के किस क	

OPTI-Part #	Description		OEM#	Price Page #
OPTIMIZE			and the same of th	
10-02-00010	OPTI-GUARD Guard Column, C8, Yellow, 5/Pk			32
10-02-00018	OPTI-GUARD Guard Column, Phenyl, Green, 5/Pk			32
10-02-00026	OPTI-GUARD Guard Column, NH2, Red, 5/Pk		No. 19 Sept.	32
માલું નાર્ફે <b>માં ફોફોરો</b> તમાર .	OPTI-GUARD Guard Column, Cation, White, 5/Pk			32
10-02-00034			and the second second	74
10-02-01485	applied demonstrating Great de C 音楽学 OPTI-GUARD 3mm Cartridge, C8, 3/Pk			33 35
10-02-01491	OPTI-GUARD 3mm Cartridge, Silica, 3/Pk			33
10-02-01495	OPTI-GUARD 3mm PEEK/SS Holder			33
<b>WEGSELVITE</b>	Spiritory (Commence of the Commence of the Com			Đ.
10.04.00020	Female Solvent Reservoir Filter for 1/8" OD Tubing, 2 μm, 5/Pk		a karana	15
10-04-00039	trangle General responsibility of the Filthing of the	74 - 74 - 75 y	2 %	15
10-04-00041	Female Solvent Reservoir Filter for 1/8" OD Tubing, 10 µm, 5/Pk इन्द्रकार निकारक समुद्रकु क्षार का प्रकार की दिन के लोग के कार्यक कर वास	s s and s and s and s and s		
10-04-00044	Female Solvent Reservoir Filter for 3/16" OD Tubing (Waters), 2 µm, 5/Pk			15
10-04-00046	Female Solvent Reservoir Filter for 3/16" OD Tubing (Waters), 10 µm, 5/Pk			15
10-04-00050	OPTI-SOLV Analytical Solvent Reservoir Filter for 1/8" OD Tubing, 2 µm, 5/Pk			14
STATE OF THE PARTY	रिक्षि कर प्राप्तिक स्था कालवा विकास का निस्ता के किया कि विकास है जिला			14
10-04-00053	OPTI-SOLV Analytical Solvent Reservoir Filter for 1/8" OD Tubing, 10 μm, 5/Pk			14, 97
10-04-00056	OPTI-SOLV Analytical Solvent Reservoir Filter for 3/16" OD Tubing (Waters), 2 µm, 5/Pk			1
10-04-00058	OPTI-SOLV Analytical Solvent Reservoir Filter for 3/16" OD Tubing (Waters), 10 μm, 5/Pk			1 <del>4</del> , 97
10-04-00062	OPTI-SOLV Prep Solvent Reservoir Filter for 1/8" OD Tubing, 2 µm, 5/Pk			[4 : : 92
10-04-00065	OPTI-SOLV Prep Solvent Reservoir Filter for 1/8" OD Tubing, 10 µm, 5/Pk			14 10 41
10-04-00068	OPTI-SOLV Prep Solvent Reservoir Filter for 3/16" OD Tubing (Waters), 2 µm, 5/Pk			14, 97
10-04-00070	OPTI-SOLV Prep Solvent Reservoir Filter for 3/16" OD Tubing (Waters), 10 µm, 5/Pk			14, 97
[8,5]K±26] <sup>Fe</sup>	[1860年至高山地山 阿纳·大林山 (1875年) 新城山南西山东河南		e de la companya de l	3
10-04-00072	Solvent Reservoir Filter with 1/16" Tube Stem, 2 µm, 5/Pk			
10-04-00074	Solvent Reservoir Filter with 1/16" Tube Stem, 10 µm, 5/Pk		jan karaka	15 2
10-04-00076	Female Solvent Reservoir Filter for 1/16" OD Tubing 2 µm, 5/Pk		•	15
10-04-00078	Female Solvent Reservoir Filter for 1/16" OD Tubing, 10 µm, 5/Pk			15
1900 But 1	ক্রিটা ক্রান্ত প্রক্রেক্ত বিভাগ ক্রিক্তান্ত্র ক্রিক্তান্ত্র করে ক্রিটা স্থান্ত্র করে ক্রিটা স্থান্তর করে ক্রিটা			
10-04-00080	OPTI-SOLV Analytical Solvent Reservoir Filter for 1/16" OD Tubing, 2 µm, 5/Pk			· · · · · · · · · · · · · · · · · · ·
10-04-00082	OPTI-SOLV Analytical Solvent Reservoir Filter for 1/16" OD Tubing, 10 μm, 5/Pk			
10-04-00095	@miraxinge - कुक्त स्वीद्रक सन्द्र पत्र OPTI-SOLV Mini Filter, 0.5 µm, 5/Pk	N S S	<u> </u>	13
10-04-00097				13
1875, 200	THE HER WARRENTH CONTRACTOR STREET			12, 100
10-04-00103	OPTI-SOLV Replacement Frits, 2 μm, 10/Pk		1V 20 3 4 1 3	
10-04-00109	্টির । এটা বুলি বিভাগেরীরে এবং করে চালের স্থান স্থান স্থানির । OPTI-LOK LP Ferrule/Filter Assembly for 1/8" OD Tubing, PEEK			23

OPTI-Part	# Description	OEM#	Price Page	e #
OPTIMIZE		Line .	and the second s	. · · · /.
10-04-00114	्रिक्ष्युक रिकेश्वर करियुक्त करित क्षेत्रिक क्षेत्रक करित करित करित करित करित करित करित कर	5500	15	, 97
10-04-00119		l'		, 97
Tropologicos	Topon-Scipt Industry and the gradient of the field fluid Science fluids in Additional Science (Additional Science of the Additional Science of the A	8.5 1 A.54.	<u>Š</u>	
10-04-00386			12,	
10-04-00391			12,	100
45.05.30.20				28
10-06-00128 শ্রেক্তর্ভার	वर्षे अभिवादेश्यावस्य मध्येकारः		8 1 1 1 4 L	28
10-06-00130 A)-08-00				Ţ.
10-06-00134	External Adjustment Regulator			28
(0±0) ±000260	。	100° ( ) 21°		
	· Programming			75
10-10-00140	SS Tubing Cutter			27
10-12-00143				27 51
10-12-00145	1/16" OD x .006" ID x 6 cm SS Tubing			27
10-12-00148				27
	。《····································			27
<b>通 产品</b>	े अन्तर में इस अस्ति है इस वास के पेसीवा ।	21 1 1 V W		27
	र १८५६ वर्ष १९५६ में १९६५ के व्याप्त विशेषा वाले			27
10-12-00155	1/16" OD x .020" ID x 20 cm SS Tubing			
10-12-00157				27
10-12-00160				27 27
10-12-00162	1/16" OD x .030" ID x 6 cm SS Tubing	en Çiri		27 22
10-12-00165	1/16" OD x .040" ID x 10 cm SS Tubing			27
10-12-00167	2 (全) 、 (3) (2 大) (4) (2 (4) (4) (4) (4) (4) (4) (4) (4) (4) (4)	<u> Calaman Pinterna da da</u>		27
16-3-30/6	हों ने कुट्ट है। वे स्टाइट पृष्टी दे वेद व्हारे पूर्व कर के किया है। जा किया के किया के किया के किया के किया क			2.7
10-13-00170	1/16" OD x .006" ID x 50 ft PEEK Tubing	33758		27
10-13-00174			3 3 1	27
10-13-00177				27 .7
10-13-00181		çı en ençemen		27
10-13-00186	5 1/16" OD x .020" ID x 50 ft PEEK Tubing			27
10-13-00191	(A.6. OC) x (201 ) (A.6. Table) (A.6. Tubing )			27
<b>流中/</b> PDD.Az				4.
10-14-00194	5、中国各位大规则 1897、19万吨在1977、1996			26 26
10-14-00197	7 1/16" OD x .020" ID x 50 ft Tefzel (ETFE) Tubing			26 / 26
10-14-00200				26
10-14-00203	5. 320 COD S DEC E 5 . C S DOS CO E 1950			26

OPTI-Part #	Description	OEM #	Price	Page #
OPTIMIZE				
	TOWNERS AND TOWNERS OF THE PARTY OF THE PART			24
10-15-00206	.100" OD x .040" ID x 50 ft Teflon (PTFE) Tubing, Natural	n de kalenda		26
10-15-00209	.100" OD x .040" ID x 50 ft Teflon (PTFE) Tubing, Black			26
AT ATTAINED	to gradie og ellere til flatter af textellettet blitte. Det i som har		eriya erre S	₹÷ 26
10-15-00213	1/16" OD x .010" ID x 50 ft Teflon (PTFE) Tubing, Black	3	, 7	26
10-15-00215	1/16" OD x .010" ID x 50 ft Teflon (PTFE) Tubing, Natural			26
10-15-00219	1/16" OD x .020" ID x 50 ft Teflon (PTFE) Tubing, Black			26
Sepath is the	tiggs fire and the electric file to the conference of the conference of the conference of the conference of the	م و المحاود المحاود	* , + :	- <u>∔</u> 26
10-15-00221	1/16" OD x .020" ID x 50 ft Teffon (PTFE) Tubing, Natural		, , , , , ,	4.
10-15-00225	I/I6" OD x .030" ID x 50 ft Teflon (PTFE) Tubing, Black			26 16
10-15-00227	1/16" OD x .030" ID x 50 ft Teffon (PTFE) Tubing, Natural	<u> </u>		26
10-15-00231	Program   148   日本 日本 日本 日本 Trail (PTFE)   Tubing, Black   1/16" OD x .040" ID x 50 ft Teflon (PTFE) Tubing, Black			26
	THE CDX COVID X 50 IC TEION (1712) TUDING DISC.	is the second	. 14.	4:
10-15-00233	1/16" OD x .040" ID x 50 ft Teflon (PTFE) Tubing, Natural			26
Commence of the commence of th	Ber (Bosk by the soften med filter, many etter in the filter to the filter of the filt			<i>1</i>
10-15-00237	1/8" OD x .062" ID x 50 ft Teflon (PTFE) Tubing, Black		. ,	26
10-15-00240	1/8" OD x .062" ID x 50 ft Teflon (PTFE) Tubing, Natural			26
10-15-00245	名字が Ping tipe of Chemic (mind to			<u>体</u> 26
	` ´ ·		5 <b>5</b> - 5	
10-20-00252	र्किमि अंशिर्फ केन्द्र पर महिल्प केन्द्र OPTI-LOK Plug, Black Acetal	The state of the s		بر. 21
10-20-00254	の「PPL-10 High Artic Argein」がら OPTI-LOK Plug, Black Acetal, 10/Pk			7/1 21
10-20-00254	OF FLOR Fig. plack Aceas, fork			,
10-20-00256	OPTI-LOK Plug, Natural PEEK, 10/Pk			21
14.20年10年				· · · //
10-20-00259	OPTI-LOK I, Kel-F, 10/Pk 大阪 Tarak A (相談 ) A (本語 ) A (本語 )			20
10-20-00262	OPTI-LOK 6K PEEK Union, .020" Thru			21
10-20-00264	で作す。は、200 元の教育は、社会を OPTI-LOK I, PEEK		4	20
10-20-00266	OPTI-LOK Coupler, PEEK	4 - 30 - 40 - 5		<u>२</u> ६ 21
10-20-00288	Option Constitutions with the control of the contro			
10-20-00268	OPTI-LOK 6K Male Nur, PEEK, Knurled Head	on Barbara a		20 20.49
10-20-00270	OPTI-LOK 6K Nuts & Ferrules, 10/Pk (10-20-00268 & 10-20-00269)			20
10-20-00272	한 문화가 등 하였다. New 한국 대한테 우리는 이 T OPTI-LOK 6K Hex Head Short Nuts & Ferrules, 10/Pk (10-20-00271 & 10-20-00269)		•••	20
The beaution	TELE COLUMN AN IMPRICATE OF THE COLUMN AND C			20
10-20-00274	OPTI-LOK 6K SS Nuts & PEEK Ferrules, 10/Pk (10-20-00273 & 10-20-00269)			30
10-20-00276	OPTI-LOK 6K Hex Head Long Nuts & Ferrules, 10/Pk (10-20-00275 & 10-20-00269)			20
10-20-00278	OPTI-LOK 6K Acetal Male Nuts & PEEK Ferrules, 10/Pk (10-20-00277 & 10-20-00269)			20
10-20-00288	OPTI-LOK 6K 10-32 Tee, 050" Thru, PEEK	100		21
1.50 6.40 3.40	<u>স্থানিক বিশ্ববিদ্যাল ক্রিটা পাল প্রায়াল বাবে পাল প্রত্যাল বা চুল হি, তেওঁ চাই লা ক্রিটা চাই চাই চাই চাই চাই</u>	17.14.7.3.		
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10-23-00389	OPTI-LOK Adjustable Adapter, Adapts M6 Male to 10-32 Female, 2/Pk			17
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10-24-00368	Optimize Universal Male Nut for 1/16" OD Tubing, M6 (Metric), 316 SS 의하기 등록 한다 제공 구역에 대한다고, 조심 역사 대기를 가장 기계를 가장 기	1 -1-28		
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10-40-01677	OPTI-FLOW Package, Includes Digital Liquid Flowmeter, with 110 Volt Adapter and Software for Windows and DOS			29
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10-47-02004	OPTI-MAX Microbore 1/16" Diameter Ruby Ball/Sapphire Seat, SS Replacement Cartridge,		Y	70.
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10-57-02004	OPTI-MAX Standard 1/8" Diameter Ruby Ball/Sapphire Seat, SS Replacement Cartridge, for Most Analytical Applications, Fits xx-5x-xxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxx			40
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(A)-48-13(A)	for Higher Flow Rate, Larger Plunger Pumps, Fits xx-6x-xxxx Series Housings, (2/Pk)			
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10-69-02005	OPTI-MAX Extended Flow 3/16" Diameter Ruby Ball/Sapphire Seat PEEK Replacement Cartridge, for Higher Flow Rate, Larger Plunger Pumps, Fits xx-6x-xxxx Series Housings, (2/Pk)			40
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21-49-00460 OPTI-MAX Outlet Cartridge Check Valve, 1/16" Ruby Ball/Sapphire Seat, PEEK Cartridge, Spectraflow 400			50
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24-36-01298	OPTI-SEAL UHMW-PE Piston Seal, (Analytical) Bischoff 2200, Anspec SM909, Alcott Micromeritics 760, 10/Pk	2 april 1715 11		59
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24-36-01304	ITB PTFE Piston Seal, (Analytical) Bischoff 2200, Anspec SM909, Alcott Micromeritics 760, 10/Pk			59
	্ট্ৰীলা তেওঁ, ক্ষত্ৰ প্ৰজন্মত্ৰেল জন্মকাল কৰে তিওঁ লগাৰেল ইন্তিজন উচা নৰ্মটেন্দ্ৰ শীলনো সহস্কৃতিৰ হিন্দ্ৰ কৰে ই কিন্দুৰ্বিকৰ সাম্প্ৰকৃত্ৰ কিছিল			58 58
24-46-00589	OPTI-MAX Outlet Cartridge CheckValve, I/16 Ceramic Ball & Seat, SS Cartridge, (Microbore Type) 2200, Anspec SM909, Alcott Micromeritics 760			58 a-
24-47-00589	OPTI-MAX Outlet Cartridge CheckValve, 1/16" Ruby Ball/Sapphire Seat, SS Cartridge, (Microbore Type) 2200, Anspec SM909, Alcott Micromeritics 760			58
ું સહ્યુર્ત નામ <b>ા</b> લું છે.	. Taka ili ku ata ang mga baan kaya at ka ang mang mang mang kang mang ng pakayakan a Salika na sa ang mang amb	22(2)3) (cs 12	· · ·	
24-48-00589	OPTI-MAX Outlet Cartridge CheckValve, I/16" Ceramic Ball & Seat, PEBK Cartridge, (Microbore Type) 2200, Anspec SM909, Alcott Micromeritics 760	2200-0130		58
24.49.00500	OPTI-MAX Outlet Cararidge Check/Valve, I/16" Ruby Ball/Sapphire Sear, PEEK Cararidge, (Microbore Type) 2200, Anspec SM909, Alcott Micromentics 760	2200.0120		58
24-49-00589	OF 1 H 1977 Outlet, Cal shage Check varie, 1/10 Trudy pairsapphilire sear, FEET, Carriage, (Interopore type) 2200, Arspec St. 1907, Accord Therometrics 760	2200-0130		36
		2200 0220		58
24-56-00581	OPTI-MAX Outlet Cartridge CheckValve, I/8" Ceramic Ball & Sear, SS Cartridge, (Analytical) Bischoff 2200, Anspec SM909, Alcott Micromeritics 760	~ ~***********************************		26

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BISCHOFF (continued)  24-57-00581 OPTI-MAX Outlet Cartridge Check Valve, 1/8" Ruby Ball/Sapphire Seat, SS Cartridge, (Analytical) Bischoff 2200, Anspec SM909, Alcott Micromeritics 760	2200-0230 58
24-58-00581 OPTI-MAX Outlet Cartridge Check Valve, I/8" Ceramic Ball & Seat, PEBK Cartridge, (Analytical) Bischoff 2200, Anspec SM909, Alcott Micromeritics 760 Ceramic Ball & Seat, PEBK Cartridge, (Analytical) Bischoff 2200, Anspec SM909, Alcott Micromeritics 760 Ceramic Ball & Seat, PEBK Cartridge, (Analytical) Bischoff 2200, Anspec SM909, Alcott Micromeritics 760 Ceramic Ball & Seat, PEBK Cartridge, (Analytical) Bischoff 2200, Anspec SM909, Alcott Micromeritics 760 Ceramic Ball & Seat, PEBK Cartridge, (Analytical) Bischoff 2200, Anspec SM909, Alcott Micromeritics 760 Ceramic Ball & Seat, PEBK Cartridge, (Analytical) Bischoff 2200, Anspec SM909, Alcott Micromeritics 760 Ceramic Ball & Seat, PEBK Cartridge, (Analytical) Bischoff 2200, Anspec SM909, Alcott Micromeritics 760 Ceramic Ball & Seat, PEBK Cartridge, (Analytical) Bischoff 2200, Anspec SM909, Alcott Micromeritics 760 Ceramic Ball & Seat, PEBK Cartridge, (Analytical) Bischoff 2200, Anspec SM909, Alcott Micromeritics 760 Ceramic Ball & Seat, PEBK Cartridge, (Analytical) Bischoff 2200, Anspec SM909, Alcott Micromeritics 760 Ceramic Ball & Seat, PEBK Cartridge, (Analytical) Bischoff 2200, Anspec SM909, Alcott Micromeritics 760 Ceramic Ball & Seat, PEBK Cartridge, (Analytical) Bischoff 2200, Anspec SM909, Alcott Micromeritics 760 Ceramic Ball & Seat, PEBK Cartridge, (Analytical) Bischoff 2200, Anspec SM909, Alcott Micromeritics 760 Ceramic Ball & Seat, PEBK Cartridge, (Analytical) Bischoff 2200, Anspec SM909, Alcott Micromeritics 760 Ceramic Ball & Seat, PEBK Cartridge, (Analytical) Bischoff 2200, Anspec SM909, Alcott Micromeritics 760 Ceramic Ball & Seat, PEBK Cartridge, (Analytical) Bischoff 2200, Anspec SM909, Alcott Micromeritics 760 Ceramic Ball & Seat, PEBK Cartridge, (Analytical) Bischoff 2200, Analytical Ball & Seat, PEBK Cartridge, (Analytical) Bischoff 2200, Analytical Ball & Seat, PEBK Cartridge, (Analytical) Bischoff 2200, Analytical Ball & Seat, PEBK Cartridge, (Analytical) Bischoff 2200, Analytical Ball & Seat, PEBK Cartridge, (Analytical) Bisc	2200-0250 22501-0-940
DIONEX	<del>-</del>
25.08.00594 HPLC First Aid Kit, DOP, GPM-1, DRP	61
25-34-00596 Improved Ruby Piston, DQP, GPM-1, DRP, GPM-2, DXP, AGP (Analytical), 2000, 4000	36904 61
25.36.00598 OPTI-SEAL UHMW-PE Piston Seal (Hastelloy C Spring), All Analytical , 10/Pk	61
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25-36-00602 Back-Up Seal, All Analytical, 10/Pk  Standard Standard Light Standard St	38272 61
25-38-00607 Tested Outlet Check Valve (Old Style), DQP, GPM-1, DRP (公司) (公司) (公司) (公司) (公司) (公司) (公司) (公司)	
25-38-00610 Tested Outlet Check Valve (New Style), GPM-2, DXP, AGP (Analytical), 2000, 4000	42761 61
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25-58-00613 OPTI-MAX Inlet Cartridge Check Valve, 1/8" Ceramic Ball & Seat, PEEK Cartridge	38273 60
DQR, GPM-1, DRP, GPM-2, DXP, AGP (Analytical), 2000, 4000 验证证据:	OFFICE N
25-59-00612 OPTI-MAX Outlet Check Valve (New Style), I/8" Ruby Ball/Sapphire Seat, PEEK Cartridge,	
GPM-2, DXP, AGP (Analytical), 2000, 4000 AANALONE CATHERINE THE SECTION THE PROPERTY OF THE P	42761 60
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25-59-00616 OPTI-MAX Outlet Cartridge Check Valve (Old Style), 1/8 Ruby Ball/Sappriire Seat, FEER Call tildge, DQP, GPM-1, DRP	38272 60
GILSON/RAININ NOTE: Gilson OEM part numbers listed here — for Rainin OEM part numbers, please see pag	ges 62-63.
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26-08-00622 HPLC First Aid Kit, 10 mL SC Type Head	经 (1)
26-34-00624 Piston, 10 mL S/SC Head [Gilson, Rainin HP, HPX, HPXL, SD200/300]	<b>10</b> 就的。
26-36-00630 ITB PTFE Piston Seal, 10 mL S/SC Head [Gilson, Rainin HP, HPX, HPXL, SD200/300]	5463125095 63
26 36 00632 OPTI-SEAL LIHMW-PE Piston Seal, 10 mL S/SC Head [Gilson, Rainin HP, HPX, HPXL, SD200/300]	5463125895 63
26-36-00634 OPTI-SEAL UHMW-PE Piston Seal, 5 mL S/SC Head [Gilson, Rainin HP, HPX, HPXL, SD200/300]	5463088863 63
26-36-00636 ITB PTFF Piston Seal, 5 mL S/SC Head [Gilson, Rainin HP, HPXL, SD200/300]	5463088063 63
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26-46-00647 OPTI-MAX Oudet Cartridge Check Valve, 1/16" Ceramic Ball & Seat, 5, 10 & 25 mL S/SC Heads [Gilson, Rainin HP, HPXL, SD200/300]	<b>02</b>
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26-47-00647 OPTHMAX Outlet Cartridge Check Valve, I/16" Ruby Ball/Sapphire Seat, SS Cartridge, 5, 10 & 25 ml. S/SC Heads [Gilson, Rainin HP, HPX, HPXL, SD200/300]	
26-48-00647 OPTI-MAX Outlet Cartridge Check Valve, I/16" Ceramic Ball & Seat, 5, 10 & 25 mL S/SC Heads[Gilson, Rainin HP, HPX, HPXL, SD200/300]	
26-49-00647 OPTHMAX Outlet Cartridge CheckValve, I/16" Ruby Ball/Sapphire Sear, SS Cartridge, 5, 10 & 25 mL S/SC Heads[Gilson, Rainin HP, HPX, HPXL, SD200/300	
2444 (1869) - 1874 - 1486 - 178 - 1686 - 168	· PKETER. F.
26-56-00647 OPTLMAX Outlet Cartridge Check Valve, 1/8" Ceramic Ball & Seat, 5, 10 & 25 mL S/SC Heads [Gilson, Rainin HP, HPX, HPXL, SD200/300]	3645245 62
26-57-00647 OPTHMAX Outlet Cartridge Check Valve, I/8" Ruby Ball/Sapphire Seat, SS Cartridge, 5, 10 & 25 mL SSC Heads [Gilson, Rainin HP.HPX.L.SD200/300]	

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	Description  ININ (continued) NOTE: Gilson OEM Part numbers listed here — for Rainin OEM Part numbers, please see part numbers.		Frice	rage #
M. H. William	নিন্দিনকৈ সামক্ষান্ত ইয়া কেন্দ্ৰ কি উন্নত ইউনিয়ান ই সিন্দ্ৰ মুখ্য বিষয়ী বিষয় সংক্ৰান্ত সংক্ৰান্ত কৰিছিল।	NEWSE !		ti.
26-58-00647 26-59/060-0	OPTI-MAX Outlet Cartridge Check Valve, 1/8" Ceramic Ball & Seat, 5, 10 & 25 mL S/SC Heads [Gilson, Rainin HP, HPX, HPXL, SD200/300]	3645245		62 53
26-59-00647	OPTHMAX Outlet Cartridge CheckValve, 1/8" Ruby Ball/Sapphire Seat, SS Cartridge, 5, 10 & 25 mL S/SC Heads[Gilson, Rainin HP, HPX, HPXL, SD200/300]	3645245		62
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27-08-00657	HPLC First Aid Kit, HP-1090 中国民族政治 经企业企业企业			68 -E
27-34-00658	Sapphire Plunger, HP-1050, HP-1100	5062-2441		68
27-36-00663	OPTI-SEAL UHMW-PE Plunger Seal, HP-1090	5062-2494	<u></u>	·s: 68
<b>建福油的</b> 设备。	Did (epp.) 146/epp. 156/epp. 1	5062-2494		68
27-36-00665	भिन्न सन्तिम्बर्धास्त्र समाप्तिनास्त्रीति समित्र । १००० व १०० व			争
27-36-01570	OPTI-SEAL UHMW-PE Plunger Seal, HP-1050, HP-1100	5062-8516		68 3
27-36-01572	ITB PTFE Plunger Seat, HP-1050, HP-1100	5062-8516		68
27-38-00672	部型 部域: Pictary Span (JR) (1996) (1997) (Jr) (Arc) (Cartridge Check Valve Replacements, HP-1090, 2/Pk	79835-67101		67
27-38-00682	Tested Outlet Cartridge Check Valve with Housing, HP-1090 79835-25211 8			67
60 1.13 to 10 10 10 10 10 10 10 10 10 10 10 10 10	and the Constitution of th	Citizen Linguist		-8.1
27-57-01330	OPTI-MAX Outlet Cartridge Check Valve, 1/8" Ruby Ball/Sapphire Sear, SS Cartridge, HP-1050, HP-1100	01018-60008		67
27-59-01330	OPTI-MAX Outlet Cartridge Check Valve, 1/8" Ruby Ball/Sapphire Seat, PEEK Cartridge, HP-1050, HP-1100	01018-60008		. 67
HITACHI				
28-08-00684	HPLC First Aid Kit, 655, L-6000, L-6200, L-6200A	Section 1		70
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28-36-00689 28-36-00689	ITB PTFE Piston Seal, 655, L-6000, L-6200, L-6200A, L-7100 (LaChrom), 10/Pk	(Birght)	4 .	70 ∯
28-36-00691	OPTI-SEAL UHMW-PE Piston Seal, with Hastelloy C Spring, 655, L-6000, L-6200, L-6200A, L-7100 (LaChrom)	Aug E. S		70
28-36-00693	OPTI-SEAL UHMW-PE Piston Seal, with Hastelloy C Spring, 655, L-6000, L-6200, L-6200A, L-7100 (LaChrom), 10/Pk			70
MEDEROIS!	teaanna dhaa an daa banta aan banta aa dhaa ah	· 和你的情况。		- 16
28-38-00699 28-38-0976	Tested Outlet Check Valve, 655, L-6000, L-6200, L-6200A	885-1331		70
28-46-00712	OPTI-MAX Outlet Cartridge Check Valve, 1/16" Ceramic Ball & Seat, SS Cartridge, 655, L-6000, L-6200, L-6200A	885-1331		69
28-47-00712	OPTI-MAX Outlet Cartridge Check Valve, 1/16" Ruby Ball/Sapphire Seat, SS Cartridge, 655, L-6000, L-6200, L-6200A	885-1331		69
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28-48-00712	அரிக்க குடியாடும் சார்க் பிறிய இரு பார்கள் இரியிரும். இதி பார்கள் இரியிரும் குறிக்க குறிக்க குறிக்க OPTI-MAX Outlet Cartridge Check Valve, I/16" Ceramic Ball & Seat, PEEK Cartridge, 655, L-6000, L-6200, L-6200A	885-1331		69
28-49-00712	OPTI-MAX Outlet Cartridge Check Valve, 1/16" Ruby Ball/Sapphire Seat, PEEK Cartridge, 655, L-6000, L-6200A	885-1331		69
100000000000000000000000000000000000000	· · · · · · · · · · · · · · · · · · ·			
28-56-00712	OPTI-MAX Outlet Cartridge Check Valve, 1/8" Ceramic Ball & Sear, SS Cartridge, 655, L-6000, L-6200, L-6200A			. 69
28-57-00712	OPTI-MAX Outlet Cartridge Check Valve, 1/8" Ruby Ball/Sapphire Seat, SS Cartridge, 655, L-6000, L-6200A			69
28.58-667/ g 28-58-00712	OPTI-MAX Outlet Cartridge Check Valve, 1/8" Ceramic Ball & Seat, PEEK Cartridge, 655, L-6000, L-6200, L-6200A			5): 69
28-59-00712	OFTI-MAX Outlet Cartridge Check Valve, 1/8" Ruby Ball/Sapphire Seat, PEEK Cartridge, 655, L-6000, L-6200A			69

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28-46-02094	OFFI MAY Quelet Cartridge Check Valve, 1/16" Ceramic Ball & Seat, SS Cartridge, L-7100 (LaChrom)	810-1005	69
The Digital	The same of the sa	810-1005	69
28-47-02094	OPTI-MAX Outlet Cartridge Check Valve, 1/16" Ruby Ball/Sapphire Seat, SS Cartridge, L-7100 (LaChrom)	- '	
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28-48-02094	OPTI-MAX Outlet Cartridge Check Valve, 1/16" Ceramic Ball & Seat, PEEK Cartridge, L-7100 (LaChrom)	810-1003	\$
28-49-02094	OPTI-MAX Outlet Cartridge Check Valve, 1/16" Ruby Ball/Sapphire Seat, PEEK Cartridge, L-7100 (LaChrom)	810-1005	69
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29-36-00724	ITB PTFE Piston Seal, Primary, 2300, 2350, 10/Pk	Carmen E	71
Market Wife	OPTI-SEAL UHMW-PE Piston Seal, Secondary, 2300, 2350 10/Pk	23.05 0 0.00	71
29-36-01298	MICHER LANGUAGE RANGE MAN AND MAN	Washite !	71
29-36-01304	ITB PTFE Piston Seal, Secondary, 2300, 2350, 10/Pk	minted to	1
B 364 10.	OPTI-SEAL UHMW-PE Piston Seal, Primary, 2300, 2350, 10/Pk		71
29-36-01306			
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29-66-01344	OPTI-MAX EF Outlet Cartridge Check Valve 3/16" Ceramic Ball & Seat, SS Cartridge, 2300, 2350	र १ के किया है है।	
29-67-01344	ODTI MAY SE Quelet Cartridge Check Valve 3/16" Ruby Ball/Sapphire Seat, SS Cartridge, 2300, 2350	60-2253-209	71
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29-68-01344	OPTI-MAX EF Outlet Cartridge Check Valve 3/16" Ceramic Ball & Seat, PEEK Cartridge, 2300, 2350	de agração	
29-69-01344	OPTI-MAX EF Outlet Cartridge Check Valve 3/16" Ruby Ball/Sapphire Seat, PEEK Cartridge, 2300, 2350	60-2253-209	71
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30-36-00732	OPTI-SEAL UHMW-PE Piston Seal, Knauer M640, I 0/Pk		103
	OPTI-SEAL UHMW-PE Piston Seal, Knauer M640, 10/Pk		102
LDC/MILTO	OPTI-SEAL UHMW-PE Piston Seal, Knauer M640, 10/Pk		
	OPTI-SEAL UHMW-PE Piston Seal, Knauer M640, 10/Pk  DN ROY  Fight Control to the state of the sta		10:
LDC/MILTO 2015 (1975) 31-08-00734	OPTI-SEAL UHMW-PE Piston Seal, Knauer M640, 10/Pk  ON ROY  FIGURE 10. 10. 10. 10. 10. 10. 10. 10. 10. 10.	्रक्तिका स्टब्स् 1960066975	
31-08-00734	OPTI-SEAL UHMW-PE Piston Seal, Knauer M640, 10/Pk  ON ROY  SIGN TO Let 10  HPLC First Aid Kit, All Analytical  Will State of the State	1960066975 。福度記	7.
21-08-00734 31-08-00734 31-24-00736	OPTI-SEAL UHMW-PE Piston Seal, Knauer M640, 10/Pk  ON ROY  SIGN TO BE TO THE SEAL OF THE S	1960066975 	7.
LDC/MILTO D : 31-08-00734 31-24-00736 31-34-00738	OPTI-SEAL UHMW-PE Piston Seal, Knauer M640, 10/Pk  ON ROY  SIGN TO LOCATE HPLC First Aid Kit, All Analytical  First State Control of Control  1/16" Nut & Ferrule, for Discharge Tube  Control of Control  Sapphire Plunger, All Analytical  State Aid State Control  State Aid	1960066975 。福度記	7. 7. 7. 7. 7. 7. 7. 7. 7. 7. 7. 7. 7. 7
LDC/MILTO 31-08-00734 1-24-00736 31-24-00738 31-34-00740	OPTI-SEAL UHMW-PE Piston Seal, Knauer M640, 10/Pk  DN ROY  SIGN TO BE TO THE PROPERTY OF THE P	1960066975 নিট্টেইন 801306 ে নুটেইন্টেইন	7. 7. 7. 7. 7. 7. 7. 7. 7. 7. 7. 7. 7. 7
31-24-00736 31-34-00740 31-36-00746	OPTI-SEAL UHMW-PE Piston Seal, Knauer M640, 10/Pk  ON ROY  SIGN TO Seal  HPLC First Aid Kit, All Analytical  (A) Seal Control of the Control	1960066975 (日本) 801306 (日本) (日本) 204040 (日本) (	77 77 77
2. 95 13.31-08-00734 2. 2. 97 3.31-24-00736 31-24-00736 31-34-00740 31-36-00746	OPTI-SEAL UHMW-PE Piston Seal, Knauer M640, 10/Pk  ON ROY  SIGN TO BE TO THE TOTAL SEAL OF THE TOTAL S	1960066975 எத்தேர் 801306 ் ஒத்தேரிதர் 204040	7. 7
31-36-00750	OPTI-SEAL UHMW-PE Piston Seal, Knauer M640, 10/Pk  ON ROY  FIGURE 10.  HPLC First Aid Kit, All Analytical  Figure 10.  1/16" Nut & Ferrule, for Discharge Tube  Sapphire Plunger, All Analytical  Stock 10.  Sapphire Plunger, All Analytical  UHMW-PE Plunger Seal, Gold, All Analytical, 10/Pk  Plunger Seal Replacement Kit, ITB	1960066975 (1960-1960-1960-1960-1960-1960-1960-1960-	777777777777777777777777777777777777777
2. 95 13.31-08-00734 2. 2. 97 3.31-24-00736 31-24-00736 31-34-00740 31-36-00746	OPTI-SEAL UHMW-PE Piston Seal, Knauer M640, 10/Pk  DN ROY  SING THE SEAL SEAL SEAL SEAL SEAL SEAL SEAL SEA	1960066975 	7. 7. 7. 7. 7. 7. 7. 7. 7. 7. 7. 7. 7. 7
31-34-00740 31-36-00750 31-36-00766	OPTI-SEAL UHMW-PE Piston Seal, Knauer M640, 10/Pk  DN ROY  SING THE SEAL SEAL SEAL SEAL SEAL SEAL SEAL SEA	1960066975 (1960-1960-1960-1960-1960-1960-1960-1960-	777777777777777777777777777777777777777
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31-36-00755 31-38-00755	OPTI-SEAL UHMW-PE Piston Seal, Knauer M640, 10/Pk  DN ROY  #PLC First Aid Kit, All Analytical  #PLC First Aid Kit, All Analytical  #Pluger Total for Discharge Tube  ### Total for Discharge Tube  ### Total for Discharge Tube  ### Total for Discharge Tube  #### Total for Discharge Tube  ##### Total for Discharge Tube  ##### Total for Discharge Tube  ####### Total for Discharge Tube  ###################################	1960066975  801306  505050505  204040  305050  801598  515050  206234  206129001	77 77 77 77 77 77 77 77 77 77 77 77 77
31-36-00755	OPTI-SEAL UHMW-PE Piston Seal, Knauer M640, 10/Pk  ON ROY  HPLC First Aid Kit, All Analytical	1960066975  801306  50505555  204040  305055  801598  61598  206234  206129001	77 77 77 77 77 77 77 77 77 77 77 77 77
31-36-00755 31-38-00755	OPTI-SEAL UHMW-PE Piston Seal, Knauer M640, 10/Pk  DN ROY  HPLC First Aid Kit, All Analytical  1/16" Nut & Ferrule, for Discharge Tube  Sapphire Plunger, All Analytical  Plunger Crosshead Spring, Minimetric  UHMW-PE Plunger Seal, Gold, All Analytical, 10/Pk  Plunger Seal Replacement Kit, ITB  OPTI-SEAL UHMW-PE Plunger Seal, All Analytical  ITB PTFE Plunger Seal, All Analytical  Tested Suction Check Valve, All Analytical  Tas in 180 Best Seal, All Analytical  Check Valve Rebuild Kit (All Internal Parts, Rebuilds I)	1960066975  801306  196234  204040  301398  30	77 77 77 77 77 77 77 77 77 77 77 77 77
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32-48-00787	OPTI-MAX Outlet Cartridge Check Valve, 1/16" Ceramic Ball & Seat, PEEK Cartridge, 2150, 2248	80-1035-20		76
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33-32-01638	Calcium Cathode Lamp 3100 AA Spectrophotometer  Presign Commission (India) (In	· 外的通過定。		79
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33-58-00835 OPTI-MAX Outlet Cartridge Check Valve, 1/8" Ceramic Ball & Seat, PEEK Cartridge, Model 250, Series 4, 200, 400, 410, 620, Integral 4000	0254-0197 78
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34-56-00893	OPTI-MAX Outlet Cartridge Check Valve, I/8" Ceramic Ball & Seat, SS Cartridge, LC-600/LC-9A, LC-10AD/AT, ESA Model 580	(2) (p. 189) dr.)	18
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35-08-01334	HPLC First Aid Kit, P-Series	સંસ્કૃતિકા -	86
35-32-01333	ि कार्यक्रमाण क्षाण अवस्थान अवस्थान SP Focus Detector Lamp, Normal	9551-0023	86
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35-36-00917	마토르(Garage State Control of the Con	. Kristiji (1975)	§ 86
35-36-00917 Sessio (19-6)	क्षिणेट्रेट्रेट्ट मार्गिक्ट मार्जेन्स्री जन्म स्थाने नीय है. क्षित्रेन्स्र नारक्ष्मिक्ष्मिक्षित्रहों .	\$ £9544 + 5	80
35-36-00919	OPTI-SEAL UHMW-PE Flush Seal, 8800, 8810, IsoChrom, P-Series, 10/Pk (Flush Seal) 마단 단리하다 한테로(Bell 대한 본 하는 대한 로마 기본 (Bell HO)	State Banks	85 9-
35-36-00921	ITB PTFE Flush Seal, 8800, 8810, IsoChrom, P-Series, 10/Pk (Flush Seal)		85
35-36-00931	OPTI-SEAL UHMW-PE Piston Seal, 8800, 8810, IsoChrom, P-Series, 10/Pk	STATES LO	85 85
35-36-00933	OPTI-SEAL UHMW-PE Piston Seal, 8000, 10/Pk	iste Più	٠,٠
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35-36-00935	OPTI-SEAL UHMW-PE Piston Seal, 8700, 8700XR, 8750, 10/Pk	્યું, પ્રાથમિક છું	86 - <u>.).</u>
35-36-00937	ITB PTFE Piston Seal, 8700, 8700XR, 8750, 10/Pk		86
35-36-00939	ITB PTFE Piston Seal, 8800, 8810, IsoChrom, P-Series, 10/Pk	Translated to	5). 85
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35-38-00941	Check Valve Tube Assembly (For Outlet)	A3479-010S	85
35-38-00944	প্রতিপরিক্রনার সামে (ggargin) তার কিন্তু এক্সক্রেম্বর Tested Transducer Check Valve, P-Series	A3990-010	85
35-38-00949	ੀਲਿੰਦਰ, ਅਬੰਦ ਤੋਂ ਸ਼ੁਰੂਰ ਲਾਲ ਲਈ ਹੈ। ਬਹਿਤ ਵਿੱਚ ਨਿਰੀਸ਼ ਦੂਨ ਵਿੱਚ ਕਿਸ਼ Tested Outlet Check Valve, 8700, 8800, 8810, IsoChrom	A3490-010	<u>#</u> 85
33-38-00747	Tested Outlet Check Yaive, 8700, 8800, 1810, IsoChrom - देंग्युंक के के निकासिक के किया किया किया किया किया किया किया किया	A3490-010	85
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35-56-00956	OPTI-MAX Inlet Cartridge Check Valve, 1/8" Ceramic Ball & Seat, SS Cartridge, 8700, 8800, 8810, IsoChrom, P-Series	A3495-010	84
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-57-00956	DPTI-MAX Inlet Cartridge Check Valve, 1/8" Ruby Ball/Sapphire Seat, SS Cartridge, 8700, 8800, 8810, IsoChrom, P-Series	A3473-010		
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-08-00967	HPLC First Aid Kit, 200 Series (without Self-Flushing Option)			
-24-00969	SSI Style 1/4-28 Nut for 1/16" OD Tubing	للتسسم		
340.4	SSI Style SS Ferrule for 1/16" OD Tubing			
-24-0167 <del>4</del>		17-18-5	<u></u>	
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-34-01296	Sapphire Piston, 200 Series (without Self-Flushing Option)	justan s		
-36-01300	ITB PTFE Piston Seal, 200 Series & Model 300, 10/Pk	- die Gg		
\$4.4 mm	OPTI-SEAL UHMW-PE Piston Seal, 200 Series & Model 300, 10/Pk			
-36-01302	OPTI-SEAL OFFINANCE PISTOR SEAL, 200 Series of Today in Edition of Seal Control of Seal Contr	in small to		
	guing for many states. The treaty, will demand the Aden, Trightening, 123 Gardy, I Media 200	Design 6		÷
-56-00987	OPTI MAY Quelet Cortridge Check Valve 1/8" Ceramic Ball & Seat, 55 Cartridge, 200 Series & Florer 500	02-0163		
-30-00767	1976年,1976年,2月2日,1986年,1986年的成立。1987年,北京中国市大大的国际市场上发展,发展了大大大大的发展。1986年,1987年的1976年,2017年	02-0163	, , , , ,	
6-57-00987	OPTI-MAX Outlet Cartridge Check Valve, 1/8" Ruby Ball/Sapphire Seat, SS Cartridge, 200 Series & Model 300			
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6-58-00987	OPTI-MAX Outlet Cartridge Check Valve, 1/8" Ceramic Ball & Seat, PEEK Cartridge, 200 Series & Model 300	1 (22.6) (34.1)	1.5	
6-59-00987	OPTI-MAX Outlet Cartridge Check Valve, 1/8" Ruby Ball/Sapphire Seat, PEEK Cartridge, 200 Series & Model 300	02-0163		
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7-36-00995	OPTI-SEAL UHMW-PE Piston Seal, 10/Pk			
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8-08-00913	HPLC Fittings Kit (Valco Sample Injection Valve)			
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8-08-02047	HPLC First Aid Kit, 2510			
8-10-01083	Seal Forming Tool, 2010, 2510		-	
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8-34-00999	Sapphire Piston, 2010, 2510	00-997261		
8-36-01000	OPTI-SFAL UHMW-PE Piston Seal, 2010, 2510	UU-77/261		
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38-36-01553	ITB PTFE Piston Seal, 9000 Star 分野 水井寺 地震の大阪、北京、松野、大阪	1 2 2 d		
38-36-01555	OPTI-SEAL UHMW-PE Piston Seal, 9000 Star			
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38-38-01021	Tested Outlet Check Valve, 2010	00-997261		

38-56-0104   OPT-MAX Quete Carridge Check Valve.   RT Carrine Bull & Sea. SS Carridge, 2010   00-97724-1-0   30-36-0104   OPT-MAX Quete Carridge Check Valve.   RT Carrine Bull & Sea. SS Carridge, 2010   00-97724-1-0   30-36-0104   OPT-MAX Quete Carridge Check Valve.   RT Ruby Bull & Sea. SS Carridge, 2010   00-97724-1-0   30-36-30-0104   OPT-MAX Quete Carridge Check Valve.   RT Ruby Bull & Sea. SS Carridge, 2010   00-97724-1-0   30-36-30-0104   OPT-MAX Quete Carridge Check Valve.   RT Ruby Bull & Sea. SEA. SC Carridge, 2010   00-97724-1-0   30-36-30-0104   OPT-MAX Quete Carridge Check Valve.   RT Ruby Bull & Sea. PERK Carridge, 2010   00-97724-1-0   30-36-30-0104   OPT-MAX Quete Carridge Check Valve.   RT Carridge Bull & Sea. PERK Carridge, 2010   00-97724-1-0   30-36-30-0104   OPT-MAX Quete Carridge Check Valve.   RT Carridge Bull & Sea. PERK Carridge, 2010   00-97724-1-0   30-36-30-0104   OPT-MAX Quete Carridge Check Valve.   RT Carridge Bull & Sea. PERK Carridge, 2010   00-97724-1-0   30-36-30-0104   OPT-MAX Quete Carridge Check Valve.   RT Carridge Bull & Sea. PERK Carridge, 2010   00-97724-1-0   30-36-30-0104   OPT-MAX Quete Carridge Check Valve.   RT Carridge Bull & Sea. PERK Carridge, 2010   00-97724-1-0   30-36-30-0104   OPT-MAX Quete Carridge Check Valve.   RT Carridge Bull & Sea. PERK Carridge, 2010   00-97724-1-0   30-36-30-0104   OPT-MAX Quete Carridge Check Valve.   RT Carridge Bull & Sea. PERK Carridge, 2010   00-97724-1-0   30-36-30-0104   OPT-MAX Quete Carridge Check Valve.   RT Carridge Bull & Sea. PERK Carridge, 2010   00-97724-1-0   30-36-30-0104   OPT-MAX Quete Carridge Check Valve.   RT Carridge Bull & Sea. PERK Carridge, 2010   00-97724-1-0   00-977	OPTI-Part #	Description	OEM#	Price	Page #
38-56-01649  OPTH-MAX Cuttlet Currolings Check Valve.   IB** Curroline Ball & Seat. SS Curroline, 2510   00-97755-1-19   30-56-01544  OPTH-MAX Initic Currolings Check Valve.   IB** Roby Ball & Seat. SS Curroline, 2510   00-97755-1-19   30-57-01544  OPTH-MAX Cuttlet Currolings Check Valve.   IB** Roby Ball & Seat. SS Curroline, 2510   00-97755-1-19   30-57-01544  OPTH-MAX Cuttlet Currolings Check Valve.   IB** Roby Ball & Seat. PERK Curroline, 2510   00-97755-1-19   30-57-01544  OPTH-MAX Cuttlet Currolings Check Valve.   IB** Roby Ball & Seat. PERK Curroline, 2510   00-97755-1-19   30-57-01544  OPTH-MAX Cuttlet Currolings Check Valve.   IB** Curroline Ball & Seat. PERK Curroline, 2510   00-97755-1-19   30-35-30-01544  OPTH-MAX Cuttlet Currolings Check Valve.   IB** Curroline Ball & Seat. PERK Curroline, 2510   00-97755-1-19   30-35-30-01544  OPTH-MAX Cuttlet Currolings Check Valve.   IB** Roby Ball & Seat. PERK Curroline, 2510   00-97755-1-19   30-35-30-01544  OPTH-MAX Cuttlet Curroling Check Valve.   IB** Roby Ball & Seat. PERK Curroline, 2510   00-97755-1-19   30-35-30-01544  OPTH-MAX Intel Curroling Check Valve.   IB** Roby Ball & Seat. PERK Curroline, 2510   00-97755-1-19   30-35-30-01544  OPTH-MAX Intel Curroling Check Valve.   IB** Roby Ball & Seat. PERK Curroline, 2510   00-97755-1-19   30-35-30-01544  OPTH-MAX Intel Curroling Check Valve.   IB** Roby Ball & Seat. PERK Curroline, 2510   00-97755-1-19   30-35-30-01544  OPTH-MAX Intel Curroline, 2510   00-97755-1-19   00-97755-1-19   00-97755-1-19   00-97755-1-19   00-97755-1-19   00-97755-1-19   00-97755-1-19   00-97755-1-19   00-97755-1-19   00-97755-1-19   00-97755-1-19   00-97755-1-19   00-97755-1-19   00-97755-1-19   00-97755-1-19   00-97755-1-19   00-97755-1-19   00-97755-1-19   00-97755-1-19	VARIAN (co	ntinued)			
28-54-01541 OFTI-MAX Clote Carridge Check Valve.   ISP Carrince Ball & Sea. 55 Carridge, 2310   00-997554-17   39   38-57-01541 OFTI-MAX Clote Carridge Check Valve.   ISP Ruly Ball Supplier Seat. 55 Carridge, 2310   00-997554-19   39   38-57-01541 OFTI-MAX Clote Carridge Check Valve.   ISP Ruly Ball Supplier Seat. 55 Carridge, 2310   00-997554-19   39   38-57-01541 OFTI-MAX Clote Carridge Check Valve.   ISP Carrince Ball & Seat. FEEK Carridge, 2310   00-997554-19   39   38-58-01541 OFTI-MAX Clote Carridge Check Valve.   ISP Carrince Ball & Seat. FEEK Carridge, 2310   00-997554-19   39   38-58-01541 OFTI-MAX Clotes Carridge Check Valve.   ISP Carrince Ball & Seat. FEEK Carridge, 2310   00-997554-19   39   38-59-01541 OFTI-MAX Clotes Carridge Check Valve.   ISP Carrince Ball & Seat. FEEK Carridge, 2310   00-997554-19   39   39-59-01541 OFTI-MAX Clotes Carridge Check Valve.   ISP Ruly Ball & Supplier Seat. FEEK Carridge, 2310   00-997554-19   39   39-59-01541 OFTI-MAX Clotes Carridge Check Valve.   ISP Ruly Ball & Supplier Seat. FEEK Carridge, 2310   00-997554-19   39   39-30-01075   ISP Ruly Ball & Supplier Seat. FEEK Carridge, 2310   00-997554-19   39   39-30-01075   ISP Ruly Ball & Supplier Seat. FEEK Carridge, 2310   00-997554-19   39   39-30-01075   ISP Ruly Ball & Supplier Seat. FEEK Carridge, 2310   00-997554-19   39   39-30-01075   ISP Ruly Ball & Supplier Seat. FEEK Carridge, 2310   00-997554-19   39   39-30-01075   ISP Ruly Ball & Supplier Seat. FEEK Carridge, 2310   00-997554-19   39   39-30-01075   ISP Ruly Ball & Supplier Seat. FEEK Carridge, 2310   00-997554-19   39   39-30-01075   ISP Ruly Ball & Supplier Seat. FEEK Carridge, 2310   00-997554-19   39   39-30-01075   ISP Ruly Ball & Supplier Seat. FEEK Carridge, 2310   00-997554-19   39   39   39   39   39   39   39	alternation of	African Course Garage Court was the arm of the state of t	\$1.50 A		516
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38-57-01544   OPTI-MAX (inter Caroridge Check Valve, 1/8" Ruby Ball & Sapphire Seat, SS Caroridge, 2010   0.99755-19   39		Provide Cartina Cartin			
38-57-01544   OPTI-MAX Outlet Carrolige Check Valve, 18° Ruby Ball & Sapphins Seat, SS Carrolige, 2010   Op97955-19   39-38-58-01043   OPTI-MAX Outlet Carrolige Check Valve, 18° Carroline Ball & Seat, PEEK Carrolige, 2010   Op97955-19   39-38-58-01544   OPTI-MAX Outlet Carrolige Check Valve, 18° Carroline Ball & Seat, PEEK Carrolige, 2010   Op97955-19   39-38-59-01544   OPTI-MAX Outlet Carrolige Check Valve, 18° Carroline Ball & Seat, PEEK Carrolige, 2010   Op97955-19   39-38-59-0154   OPTI-MAX Outlet Carrolige Check Valve, 18° Ruby Ball & Sapphins Seat, PEEK Carrolige, 2010   Op97955-19   39-38-59-0154   OPTI-MAX Outlet Carrolige Check Valve, 18° Ruby Ball & Sapphins Seat, PEEK Carrolige, 2010   Op97955-19   39-38-39-0154   OPTI-MAX Outlet Carrolige Check Valve, 18° Ruby Ball & Sapphins Seat, PEEK Carrolige, 2010   Op97955-19   39-38-39-0154   OPTI-MAX Outlet Carrolige Check Valve, 18° Ruby Ball & Sapphins Seat, PEEK Carrolige, 2010   Op97955-19   39-38-39-0154   OPTI-MAX Outlet Carrolige Check Valve, 18° Ruby Ball & Sapphins Seat, PEEK Carrolige, 2010   Op97955-19   39-38-39-39-39-39-39-39-39-39-39-39-39-39-39-					
38-57-01544   OPTI-HAX Intel Carridge Check Valve, 18° Ruby Ball & Sapphine Stat. SC Carridge, 2510   09-97754-1-10   99   38-58-01544   OPTI-HAX Outlet Carridge Check Valve, 18° Ceramic Ball & Sast. PEEK Carridge, 2510   09-97754-1-10   99   38-58-01544   OPTI-HAX Coutlet Carridge Check Valve, 18° Ceramic Ball & Sast. PEEK Carridge, 2510   09-97754-1-10   99   38-58-01544   OPTI-HAX Coutlet Carridge Check Valve, 18° Ruby Ball & Sapphine Stat. PEEK Carridge, 2510   09-97754-1-10   99   38-58-01544   OPTI-HAX Coutlet Carridge Check Valve, 18° Ruby Ball & Sapphine Stat. PEEK Carridge, 2510   09-97754-1-10   99   38-58-01544   OPTI-HAX Intel Carridge Check Valve, 18° Ruby Ball & Sapphine Stat. PEEK Carridge, 2510   09-97754-1-10   99   38-58-01544   OPTI-HAX Intel Carridge Check Valve, 18° Ruby Ball & Sapphine Stat. PEEK Carridge, 2510   09-97754-1-10   99   38-58-01544   OPTI-HAX Intel Carridge Check Valve, 18° Ruby Ball & Sapphine Stat. PEEK Carridge, 2510   09-97754-1-10   99   38-58-01544   OPTI-HAX Intel Carridge Check Valve, 18° Ruby Ball & Sapphine Stat. PEEK Carridge, 2510   09-97754-1-10   99   38-58-01544   OPTI-HAX Intel Carridge Check Valve, 18° Ruby Ball & Sapphine Stat. PEEK Carridge, 2510   09-97754-1-10   99   39-001077   PEEK Carridge, 2510   OPTI-HAX Intel Carridge Check Valve, 18° Ruby Ball & Sapphine Stat. PEEK Carridge, 2510   09-97754-1-10   09-97					
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38-55-01-34   OPTI-MAX Outlet Carridge Check Valve.   18" Ruby Ball Supphire Sear PEEK Carridge, 2010   00-97725-1-19   39	Marie Contract	भिन्न केरा कर महाभाग किए सम्बद्ध मान का प्रार्थित प्राप्त सम्बद्ध <b>अस्ति प्राप्त कर प्राप्त कर क</b> ा है। इस कार्य	S. Branding	·	7[5
38-55-01-34 OPTI-MAX Quider Carrolige Check Valve, 1/8" Ruby Ball Sapphire Sear, PEEK Carrolige, 2510   00-9775-1-19   39   38-55-01544   OPTI-MAX Inter Carrolige Check Valve, 1/8" Ruby Ball & Sapphire Sear, PEEK Carrolige, 2510   00-9775-1-19   39   38-55-01544   OPTI-MAX Inter Carrolige Check Valve, 1/8" Ruby Ball & Sapphire Sear, PEEK Carrolige, 2510   00-9775-1-19   39   39-08-01073   HPLC First Ald Kit, 1/0 ul. Head [PM5/45G, M501] (Analytical)   101   104   17   104   107   104	datum to	a francos la decuminario dante ma altre de Adeministrado de Adeministrado de Adeministrado de Adeministrado de	: 11. SPVn7: 10f		
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WATERS  39-89-01073 HPLC First Ald Kit, 100 µL Head [MS/45G, MS01] (Analytical)  39-08-01073 HPLC First Ald Kit, 125 µL Head (MS) [510, 590, 600/600E, 610, 650, 6K/6KA] (Flow Rates >10 ml/min)  39-08-01077 HPLC First Ald Kit, 225 µL Head (MS) [510, 590, 600/600E, 610, 650, 6K/6KA] (Flow Rates >10 ml/min)  39-08-01077 HPLC First Ald Kit, 225 µL Head (MS) [510, 590, 600/600E, 610, 650, 6K/6KA] (Flow Rates >10 ml/min)  39-08-01077 HPLC First Ald Kit, 225 µL Head (MS) [510, 590, 600/600E, 610, 650, 6K/6KA] (Flow Rates >10 ml/min)  101  39-08-01077 HPLC First Ald Kit, 225 µL Head (MS) [510, 590, 600/600E, 610, 650, 6K/6KA] (Flow Rates >10 ml/min)  11042 97  39-10-10108 Seal Forming flool  39-10-10108 Seal Forming flool  39-10-10108 Seal Forming flool  39-24-01090 Waters Type Compression Screw for 1/16" CD Flobing  39-24-01090 Waters Type Compression Screw for 1/16" CD Flobing  39-24-01090 Waters Type Compression Screw for 1/16" CD Flobing  39-30-01090 Ugudé Seal, Black  39-30-01090		BBT 1987 Charles in a mornibular of the control template and Committee Controlling Mortage (1987) and (1987) in the	作外的深圳外市		
### APPLC First Aid Kit, 100 pt. Head [M45/45G, M501] (Analytical)  39-08-01075   MPLC First Aid Kit, 100 pt. Head [M35/45G, M501] (Analytical)  39-08-01075   MPLC First Aid Kit, 225 pt. Head (#3) [\$10, \$90, \$600/600E, \$10, \$50, \$6/04KA] (Flow Rates >10 ml/min)  39-10-01075   MPLC First Aid Kit, 225 pt. Head (#3) [\$10, \$90, \$600/600E, \$10, \$50, \$6/04KA] (Flow Rates >10 ml/min)  39-10-01075   MPLC First Aid Kit, 225 pt. Head (#3) [\$10, \$90, \$600/600E, \$10, \$50, \$6/04KA] (Flow Rates >10 ml/min)  39-10-01085   Seaf Forming Tool  39-10-01085   Seaf Forming Tool  39-10-01085   Seaf Forming Tool  39-10-01085   Slotted Nut Driver for 1/16" Compression Screws  39-24-01090   Marker Type Compression Screw for 1/16" O'D Tubing  39-24-01090   Marker Type EKE Formis for 1/16" O'D Tubing  39-24-01090   Marker Type EKE Formis for 1/16" O'D Tubing  39-30-01095   Liquid Seal, Back  39-30-01095   Liquid Seal, Back  39-30-01097   Liquid Seal, Marker  39-30-01097   Liquid Seal, Marker  39-30-01097   Liquid Seal, Marker  39-30-01097   Marker Type EKE Formis for 1/16" O'D Tubing  39-30-01097   Marker Type EKE Formis for 1/16" O'D Tubing  39-30-01097   Liquid Seal, Marker  39-30-01097   Liquid Seal, Marker  39-30-01097   Marker Type EKE Formis for 1/16" O'D Tubing  39-30-01097   Liquid Seal, Marker  39-30-01097   Marker Type EKE Formis for 1/16" O'D Tubing  39-30-01097   Marker Type EKE Formis for 1/16" O'D Tubing  39-30-01097   Marker Type EKE Formis for 1/16" O'D Tubing  39-30-01098   Liquid Seal, Marker  39-30-01098   Marker Type EKE Formis for 1/16" O'D Tubing  39-30-01098   Marker Type EKE Formis for 1/16" O'D Tubing  39-30-01099   Liquid Seal, Marker  39-30-01090   Liquid Seal, Marker  39-30-01090   Liquid Seal, Marker  39-30-01090   Liquid Seal, Marker					
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19.30-0.1075   HPLC First All Kit. 225 µL Head (#3) [510.590.60000.610.650.6K/6K/A] (Flow Rates >10 mL/min)			the second of		101
#PLC First Aid Kir. 225 µ. Head (#1) [510, 590, 600/600E 610, 650, 64/6kA] (Flow Rares >10 m.l/min)  39-10-01077 Plunger Insertion Tool  39-10-01087 Seal Forming Tool  39-10-01089 Seal Forming Tool  39-10-01089 Seal Forming Tool  39-24-01090 Waters Type Compression Screws  39-24-01290 Waters Type Compression Screw for 1/16" OD Tubing  39-24-01290 Waters Type PEEK Ferrule for 1/16" OD Tubing  39-30-01095 Liquid Seal, Black  39-30-01095 Liquid Seal, White  39-30-01099 Liquid Seal, White  39-30-01104 Syringe Barrel Seal  39-30-01104 Syringe Barrel Seal  39-30-01114 PTFE Wather  39-30-01116 WiSP Needle, 712 and 715  77233 IOO  39-30-01118 PTFE Wather  39-30-01119 WiSP 712 Injector Rebuild Kit (Old Style)					
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39-24-01290 Waters Type PEEK Ferrule for 1/16" OD Tubing 21817 25, 97 39-30-01095 Liquid Seal, Black 05101 100 39-30-01099 Liquid Seal, White 05112 100 501001 100					
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39-30-01095 Liquid Seal, Black 05101 100 39-30-01099 Liquid Seal, White 05112 100 39-30-01102 LPV, PTFE Washer 05126 100 39-30-01104 Syringe Barrel Seal 77347 100 39-30-01114 Spacer, Lower Needle Wash 05134 100 39-30-01114 PTFE Washer 05135 100 39-30-01114 PTFE Washer 05135 100 39-30-01116 WISP Needle, 712 and 715 77233 100 39-30-01118 PTFE O-Ring, 712 HPV 100 39-30-01118 PTFE O-Ring, 712 HPV 100 39-30-01119 VISP Solvent Seal, Long 101 39-30-01129 WISP Solvent Seal, Long 101 39-30-01129 WISP 712 Injector Rebuild Kit (Old Style) 34497 100					
39-30-01095         Liquid Seal, Black         05101         100           39-30-01099         Liquid Seal, White         05112         100           39-30-01102         LPV, PTFE Washer         05126         100           39-30-01104         Syringe Barrel Seal         77347         100           39-30-01104         Syringe Barrel Seal         77347         100           39-30-01111         Spacer, Lower Needle Wash         05134         100           39-30-01114         PTFE Washer         05135         100           39-30-01114         PTFE Washer         05135         100           39-30-01116         WISP Needle, 712 and 715         77233         100           39-30-01118         PTFE O-Ring, 712 HPV         100           39-30-01118         PTFE O-Ring, 712 HPV         100           39-30-01129         WISP Solvent Seal, Long         101           39-30-01129         WISP F15 Injector Rebuild Kit (Old Style)         34497         100           39-30-01129         WISP 715 Real Pack Assembly Rebuild Kit         100					
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39-30-01099         Liquid Seal, White         05112         100           19-30-01102         LPV, PTFE Washer         05126         100           39-30-01104         Syringe Barrel Seal         77347         100           39-30-01111         Spacer, Lower Needle Wash         05134         100           39-30-01114         PTFE Washer         05135         100           39-30-01116         WISP Needle, 712 and 715         77233         100           39-30-01118         PTFE O-Ring, 712 HPV         100           39-30-01118         PTFE O-Ring, 712 HPV         100           39-30-01129         WISP Solvent Seal, Long         101           39-30-01129         WISP 712 Injector Rebuild Kit (Old Style)         34497         100           39-30-01129         WISP 715 Seal Pack Assembly Rebuild Kit         100					
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39-30-01104       Syringe Barrel Seal       77347       100         39-30-01111       Spacer, Lower Needle Wash       05134       100         39-30-01114       PTEE Washer       05135       100         39-30-01116       WISP Needle, 712 and 715       77233       100         39-30-01118       PTEE O-Ring, 712 HPV       100         39-30-01125       WISP Solvent Seal, Long       101         39-30-01129       WISP 712 Injector Rebuild Kit (Old Style)       34497       100         39-30-01132       WISP 715 Seal Pack Assembly Rebuild Kit       100					
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39-30-01111       Spacer, Lower Needle Wash       05134       100         39-30-01114       PTFE Washer       05135       100         39-30-01116       WISP Needle, 712 and 715       77233       100         39-30-01118       PTFE O-Ring, 712 HPV       100         39-30-01125       WISP Solvent Seal, Long       101         39-30-01129       WISP Solvent Seal, Long       101         39-30-01129       WISP 712 Injector Rebuild Kit (Old Style)       34497       100         39-30-01132       WISP 715 Seal Pack Assembly Rebuild Kit       100					
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39-30-01132 WISP 715 Seal Pack Assembly Rebuild Kit	39-30-01129	WISP 712 Injector Rebuild Kit (Old Style)			100
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OPTI-Part #		OLIT#	Trice Tage ii
WATERS (co	intinued)	शितंश्रहें	9:
39-31-01134	OPTI-PRIME Round Pump Head with Standard Check Valves	60058	99
39-31-01138	भारत अन्तर १ मन्य । वेन्द्र कर अन्य १ मन्द्र १८८० Fluid Upgrade Kit, Standard Check Valves, 6K/6KA	25242	99
39-31-01136		ので 05061	99
39-31-01144	Ball Plug  Temporary the Community transfers.	्राष्ट्रिकेटी के क्षेत्रकारी के कि	19
39-31-01146	Priming Syringe	27629	99 
39-31-01149	Syringe Priming Adapter/Tube: Luer Adapter & 1/8" ID Tubing (Easier to use than original nut & ferrule method)	Sales Sees 1	99
37-31-01147 30-31-01147	的中国的。中国(4)。在15万多年的1万年全国企业的企业,在1676年(4)。	60476	99
39-31-01152	Draw-Off Tube Assembly  (文章 Tube Assembly)  (文章 Tube Assembly)		1.
39-31-01157	OPTI-PRIME Priming Valve	45.00	98 75
39-31-01171	ந்திரு நிருந்து நிருந்து நிருந்து நிருந்து நிருந்து. Optimize Safety Syringe		98
39-31-01171	· 如此,我知识,是是此次还有多种,我是问题,并不知识是我们就没有在实际。这种的技术,也是一种的种种的特别的,也可以不是一个	05098	99
39-31-01293	Threaded Seal Insert, M45, M45G, M501, 510, 590, 600/600E, 610		
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39-32-01176	Zinc Lamp, 441 Detector	27.3	
39-32-01178	Quartz Lamp, 150C	7563 I	101
39-32-01180	্রার্ক্তিন্তা (বিষয়ে এই এই ক্রিক্তি) Source Lamp, 401	48419	101
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39-32-01187	Deuterium Lamp, 486 Detector 全国共和国企业中央运输。1944年至5	व्यक्तिहरू	
39-32-01295		99499	101
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39-34-01191	Plunger M45/45G, M501	26524	76
39-34-01195	स्वाहार कर कि के निकार को का के लोग अधिक अधिकारिक के लेकी, कर के देते. Plunger Indicator Rod & Spring Kit, 2/Pk	69583	96
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20.24.01207	ITB PTFE Plunger Seal, Black, 100 µL Head [M45/45G, M501, 510, 515, 590, 600/600E, 610, 6K/6KA], 10/Pk	4569	
39-36-01210	ITD DTEE Divinger Seel Red 100 ul Head (M45/45G, M501, 510, 515, 570, 600/600E, 610, 60/60A), 10/FK		96
100	TB PTFE Plunger Seal, Tan, 100 μL Head [M45/45G, M501, 510, 515, 590, 600/600E, 610, 6K/6KA], 10/Pk	3.566	96
Bearing Same	(2) (2) (2) (2) (2) (2) (2) (2) (2) (2)	26×6	96
39-36-01215	TTB PTFE Plunger Seal, 225 µL Head (#3) [510, 590, 600/600E, 610, 650, 6K/6KA], 10/Pk	્રહીસ્ટ્રીડ	\$42
39-36-01217	OPT1 SEAL LILIMAN RE Plunger Sept 225 ut Head (#3) [510, 590, 600/600E, 610, 650, 6K/6KA], 10/PK	.0 W.	96 ∵.
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39-36-01306		and a special section	<u> </u>
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39-38-01221		05090	95
39-38-01224		25.25	i i
39-38-01226	ार्टिक स्वरूप्ताहरू Inlet Check Valve Rebuild Kit, Rebuilds 2	60495	95 ₽);
20.20.0120		25212	95
39-38-01228	Order Housing	05082	95
39-38-01230		6902 69026	
39-38-01233	Actuator Seat, PTFE	05083 5097	95
19/19 <sub>0</sub> 1/24	Actuator Outlet CheckValve Rebuild Kit, Rebuilds 2	26016	95
37-38-01236	ं विकास होते न सकत ने विकास महत्वा, जिल्ला वर्ता हो हिन्दी होते. निमानी महत्व महत्व महत्व किया किया होता है कि	05071	95
39-38-01239		Kritin C	7
39-38-01244	Tested Extended Flow Inlet Check Valve, 225 µL Head (#3) [510, 590, 600/600E, 610, 650, 6K/6KA]	60307 (%)	95 8
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		OEM#	Price	Page #
OPTI-Part #		UEM#	Price	Page #
Service Deli	Companied	1,5,46. 111		
39-38-01247	Guide	32705		95
39-38-01249	Tested Extended Flow Outlet Check Valve, 400 µL (#4) & 900 µL (#6) Heads [Delta Prep 3000, 600/600E, 650]	33326		还 95
39-38-01249 SELEGIO PIRAN	Section of the Control of the Contro	JES 22		64
39-38-01308	Ruby Ball & Seat	25306		95 李
39-38-01323	Housing Seal	32706		95
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39-46-01950	OPTI-MAX Outlet Cartridge Check Valve, 1/16" Ceramic Ball & Seat, SS Cartridge, 616	55845 & 24960		93
39-46-01980	OPTI-MAX Outlet Cartridge Check Valve, 1/16" Ceramic Ball & Seat, SS Cartridge, Backflush System			94
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39-47-01950	তি নিয়েক পুৰাৰে প্ৰকাশ বিষয়ে কোনো কৰা বিষয়ে উন্নি উন্নামীন উপৰ উপৰক্ষীয়েক। উন্নামীন কিন্তু বিষয়েক বিষয়	55845 & 24960		93
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39 <del>-4</del> 7-01980	OPTI-MAX Outlet Cartridge Check Valve, 1/16" Ruby Ball/Sapphire Seat, SS Cartridge, Backflush System			74
特性的	াপুনালিক সামান প্রকাশনার জনান করা	30542 6 24120		33
39-48-01909	OPTI-MAX Outlet Cartridge Check Valve, 1/16" Ruby Ball/Sapphire Seat, SS Cartridge, 625/626 Biocompatible	30543 & 24120		94
39-48-01950	OPTI-MAX Outlet Cartridge Check Valve, 1/16" Ruby Ball/Sapphire Seat, SS Cartridge, 616	55845 & 24960		93
39-48-01980	で見られ、 これ、これでは、これは、対抗性の では、これでは、これでは、これでは、これでは、これでは、これでは、これでは、これ			94
37-40-01700	OF THE PAR Outlet Caldings Check vare, 1710 Ruby ballsappine state to Cardings, state and state of the state			
39-49-01909	OPTI-MAX Outlet Cartridge Check Valve, 1/16" Ruby Ball/Sapphire Seat, PEEK Cartridge, 625/626 Biocompatible	30543 & 24120		94
39-49-01909	OF IMPACOUNT CARRIAGE CHECK VAIVE, IT O KNOW DAMPS PROPERTY CARRIAGE CONTROL OF THE CARRIAGE CONTROL O	STATE OF CRIES		真
39-49-01950	OPTI-MAX Outlet Cartridge Check Valve, 1/16" Ruby Ball/Sapphire Seat. PEEK Cartridge, 616	55845 & 24960	-	93 24
39-49-01980	OPTI-MAX Outlet Cartridge Check Valve, I/16" Ruby Ball/Sapphire Seat, PEEK Cartridge, Backflush System			94
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39-56-01139	্রেটার প্রস্তিক্রিক ক্রান্তর একটা বিশ্বকার বিশ্বক বিশ্বকার স্থানি উত্তর ই উন্নয়ন্তর Fluid Upgrade Kit, Cartridge Check Valves Ceramic Ball & Seat, SS Cartridges	25242		99
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39-56-01256	OPTI-MAX Outlet Cartridge Check Valve, 1/8" Ceramic Ball & Seat, SS Cartridge,	25216		93
	100 µL Head [M45, M45G, M501, 510, 515, 590, 600/600E, 610, 6K/6KA] & 225 µL Head (#3) [510, 590, 600/600E, 610, 650, 6K/6KA]	23210		,,,
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39-57-01139	Fluid Upgrade Kit, Cartridge Check Valves Ruby Ball/Sapphire Seat, SS Cartridges	23242		
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39-57-01256	OPTI-MAX Outlet Cartridge Check Valve, 1/8" Ruby Ball/Sapphire Seat, SS Cartridge,	市後多 111.		
37 37 31233	100 µL Head [M45, M45G, M501, 510, 515, 590, 600/600E, 610, 6K/6KA] & 225 µL Head (#3) [510, 590, 600/600E, 610, 650, 6K/6KA]	25216		93
द्राह्मसुबद्धः, हे विश्वद्धिः,	্বৈট্ প্ৰস্থিত সুইপন্তের প্ৰভাৰত প্ৰস্তুত্বত প্ৰেণ প্ৰয়ুক্তৰ উন্নয় কৰিছিল ইন্সইন্সই ইন্সইন্সইট্, উন্নয়নটিগুইন	~ pr 1933		v.E
39-58-01139	Fluid Upgrade Kit, Cartridge Check Valves Ceramic Ball & Seat, PEEK Cartridges	252 <del>4</del> 2		99
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	「大阪」は「大阪 (大阪 ) 大阪 (大阪 ) (大阪	<b>基位</b> 图。		. it.
39-58-01256	OPTI-MAX Outlet Cartridge Check Valve, 1/8" Ceramic Ball & Seat, PEEK Cartridge, 100 µL Head [M45, M45G, M501, 510, 515, 590, 600/600E, 610, 6K/6KA] & 225 µL Head (#3) [510, 590, 600/600E, 610, 650, 6K/6KA]	25216		93
39-59-01139	Fluid Upgrade Kit, Cartridge Check Valves Ruby Ball/Sapphire Seat, PEEK Cartridges	25242		99
37-37-01137	Haid Opprate Ind. Cardings Check raines hour bainsappinine seat, i Eur. Cardings			- *

OPTI-Part #	Description	OEM # Price	Page #
WATERS (c	ontinued)		
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39-59-01256	OPTI-MAX Outlet Cartridge Check Valve, 1/8" Ruby Ball/Sapphire Seat, PEEK Cartridge, 100 μL Head [M45, M45G, M501, 510, 515, 590, 600/600Ε, 610, 6Κ/6ΚΑ] & 225 μL Head (#3) [510, 590, 600/600Ε, 610, 6Κ/6ΚΑ]	50, 6K/6KA] 25216	93
	al Bankari ng Lagura, Cigo samang Gantanggalangan Bentapp. Pilan Saman Anggalangga Kabalangga Kabalangga.	1克特特	
39-66-01267	OPTI-MAX EF Outlet Cartridge Check Valve 3/16" Ceramic Ball & Seat, SS Cartridge, 400 μL (#4) & 900 μL (#6) Heads [Delta Prep 3000, 600/600E, 650]	33326	93
¥45. A.	াহালীর প্রত্যা কার এক পালে স্বায়ন্ত্র কোন্তর বিভান কার্মিকী, কালে স্বাহালিক লোক প্রস্তান হার্মিক কার্যান্ত্রক মন্ত্রী, বিভাগন কার্যান্ত্র কার্যান্ত্র স্থানিক বিভান কার্যান্ত্র করে কার্যান্ত্র করে কার্যান্ত্র করে কার্যান্	ង្គង់ស៊ីរៈ	
39-67-01267	OPTI-MAX EF Outlet Cartridge Check Valve 3/16" Ruby Ball/Sapphire Seat, SS Cartridge 400 µL (#4) & 900 µL (#6) Heads [Delta Prep 3000, 600/600E, 650]	33326	93
4.1	ন্তুৰ নিৰ্ভাৱ এই মানুৰ উপ্তেখিনত আনৰ্থ পৰাৰ প্ৰকাশ কৰিছিল কৰিছিল কৰিছিল। এই প্ৰকাশ কৰিছিল। - উল্লেখ্য এই কেন্দ্ৰ কৰিছিল। ইন্তিৰ বিনাধ কৰা প্ৰকাশ কৰিছে	3.90	<sup>1</sup> 75.
39-68-01267	OPTI-MAX EF Outlet Cartridge Check Valve 3/16" Ceramic Ball & Seat, PEEK Cartridge, 400 μL (#4) & 900 μL (#6) Heads [Delta Prep 3000, 600/600E, 650]	33326	93
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39-69-01267	OPTI-MAX EF Outlet Cartridge Check Valve 3/16" Ruby Ball/Sapphire Seat, PEEK Cartridge, 400 µL (#4) & 900 µL (#6) Heads [Delta Prep 3000, 600/600E, 650]	33326	93
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40-24-01273	Parker Style Union for 1/16" OD Tubing, with Nuts & Ferrules, .020" Thru		25
40-24-01273	Total St. State Company to the Company		25
40-24-01276	Parker Style Nuts & Ferrules, 10/Pk (40-24-01275 & 40-24-01291)		25
40-24-01291	Parker Style Ferrule for 1/16" OD Tubing, SS		25
41-24-01278	State Share 4년 이 1935 등 1915년 Valco Extra Long Male Nut for 1/16" OD Tubing		25
41-24-01280	Valco Union for 1/16" OD Tubing, with Nuts & Ferrules, .029" Thru		25
41-24-01200	ANTO CHILDHAND LAND CONTROL TO A CONTROL OF THE CON		
41-24-01282	Valco PEEK Ferrule for 1/16" OD Tubing		<b>25</b>
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42-08-00913	HPLC Fittings Kit, Valco Sample Injection Valve		/3
42-08-02047	HPLC First Aid Kit, 880/980 Series		73
42 3333	THE THE THE THE THE HER HER HER THE	2305-0005A & 6560-H107A	73
42-34-01354	Sapphire Fiston, Dir-1, 000/700 Jenes	2303-0003A & 6300-11107A	14
42-36-01356	ITB PTFE Piston Seal, BIP-1, 880/980 Series, 10/Pk	24	73
65.36	कृति होता विभिन्ने स्वान् वर्षात्र वर्षात्र अस्ति अस्ति ।	多的。可能仍在所属。(1. get )。	73
42-36-01358	OPTI-SEAL UHMW-PE Piston Seal, BIP-1, 880/980 Series, 10/Pk	San	
42-38-01021	Tested Outlet Check Valve, BIP-1	6260-H102A	73 2
	OPTI-MAX Outlet Cartridge Check Valve, 1/8" Ceramic Ball & Seat, SS Cartridge, BIP-1	6260-H102A	72
42-56-01043	TO STATE AND THE STATE OF THE STATE OF THE CONTROL OF THE CONTROL OF THE STATE OF T	. โ เอ็มอาสารณ์ขึ้นการ	
42-56-01546	OPTI-MAX Outlet Cartridge Check Valve, 1/8" Ceramic Ball & Seat, SS Cartridge, 880/980 Series	6560-H404A	72 72
19. 64 de 19.	্রতিক টেক্সান্তার উপ্তেপন্ত আন্তান হোল । তি মাত্র পূর্ব ইনুকার মইন্ট্রেইটা বিশ্ববিদ্ধান্ত এক	6260-H102A	72
14 15 2 91 26	OPTI-MAX Outlet Cartridge Check Valve, I/8" Ruby Ball/ Sapphire Seat, SS Cartridge, BIP-I	grand of the second	, ,
42-57-01546	OPTI-MAX Outlet Cartridge Check Valve, 1/8" Ruby Ball & Sapphire Seat, SS Cartridge, 880/980 Series	6560-H404A	72

OPTI-Part # Description		OEM#	Price Page
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42-58-01043	OPTI-MAX Outlet Cartridge Check Valve, 1/8" Ceramic Ball & Seat, PEEK Cartridge, BIP-1	6260-H102A	
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42-58-01546	OPTI-MAX Outlet Cartridge Check Valve, 1/8" Ceramic Ball & Seat, PEEK Cartridge, 880/980 Series	6560-H404A	7
42-59-01043	्रमा अन्तेषा ४ तम् वर्षा स्थानस्तिप्रदार्दे विद्याते अनुस्तरम् । साम्येतनाम् देशमे अञ्चलक्षास्य वर्षसम्बद्धाः ४ ००० सम्बद्धाः स्थान । । । स्थान	Section 1975	
	OPTI-MAX Outlet Cartridge Check Valve, 1/8" Ruby Ball/ Sapphire Seat, PEEK Cartridge, BIP-1	6260-H102A	7
42-59-01546	OPTI-MAX Outlet Cartridge Check Valve, 1/8" Ruby Ball & Sapphire Seat, PEEK Cartridge, 880/980 Series	6560-H404A	7
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44-08-00433	HPLC First Aid Kit, 300, M480	<u> </u>	6
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44-36-00437	OPTI-SEAL UHMW-PE Piston Seal, 300, M480	2266-0304	6
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44-38-00442	Tested 1/8" Inlet Check Valve, 300, M480	5005-3200	. 6
44-38-00449	Property of Charles (Authorite Alice Action	and the second	
44-38-00449	Check Valve Rebuild Kir, 1/8" Ruby Ball/Sapphire Seat, Rebuilds 2		6
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44-46-00460	OPTI-MAX Outlet Cartridge Check Valve, 1/16" Ceramic Ball & Seat, SS Cartridge, 300 and M480 Series	5005-3100	6
44-47-00460	OPTI-MAX Outlet Cartridge Check Valve, 1/16" Ruby Ball/Sapphire Seat, SS Cartridge, 300 and M480 Series	5005-3100	6
44-48-00460	aprindered the Landing Glass was established from the Samuel And Samuel And Samuels. The content of the servicing o	and the second of the second o	*.
44-46-00460	OPTI-MAX Outlet Cartridge Check Valve, 1/16" Ceramic Ball & Seat, PEEK Cartridge, 300 and M480 Series	5005-3100	6
44-49-00460	OPTI-MAX Outlet Cartridge Check Valve, 1/16" Ruby Ball/Sapphire Seat, PEEK Cartridge, 300 and M480 Series	5005-3100 5005-3100	6
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44-36-00460	OPTI-MAX Outlet Cartridge Check Valve, 1/8" Ceramic Ball & Seat, SS Cartridge, 300 and M480 Series		6
44-57-00460	OPTI-MAX Outlet Cartridge Check Valve, 1/8" Ruby Ball/Sapphire Seat, SS Cartridge, 300 and M480 Series		6
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43-36-01878	OPTI-MAX Inlet Cartridge Check Valve, Ceramic Ball & Seat, SS Cartridge, 420/422 M-Head		107
45-57-01898	OPTI-MAX Inlet Cartridge Check Valve, Ruby Ball/Sapphire Seat, SS Cartridge, 420/422 M-Head		10
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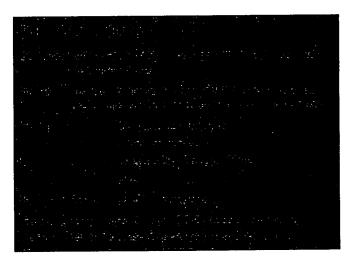
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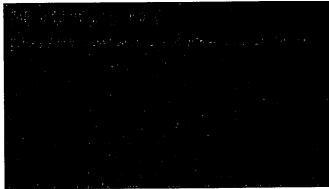
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